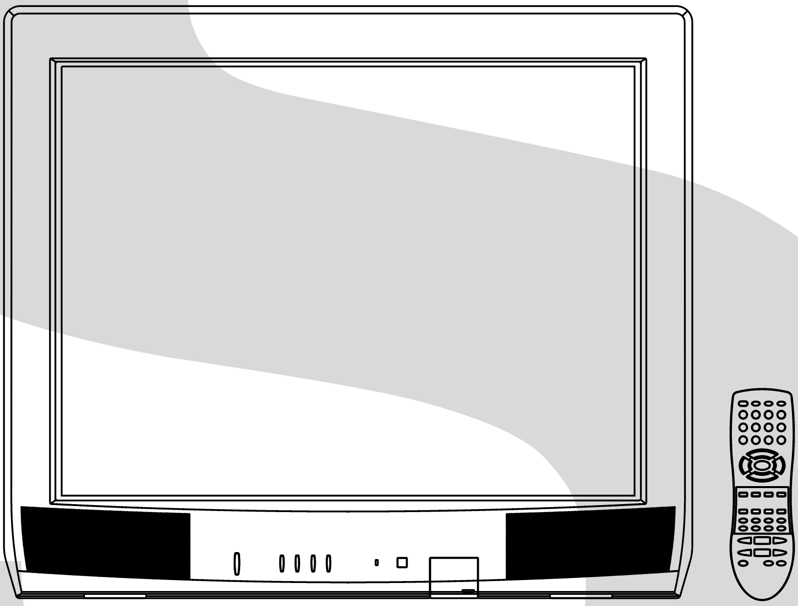
TOSHIBA

FILE NO. 050-200113

SERVICE MANUAL

COLOR TELEVISION

27A51



SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

2. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

3. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.
Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.

4. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

5. TAKE CARE TO DEAL WITH THE CATHODE-RAY TUBE

In the condition that an explosion-proof cathode-ray tube is set in this equipment, safety is secured against implosion. However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.

6. AVOID AN X-RAY

Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc.
Therefore, when repairing the high voltage peripheral circuit, use the designated parts and make sure not modify the circuit.
Repairing except indicates causes rising of high voltage, and it emits an X-ray from the cathode-ray tube.

7. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

(INSULATION CHECK PROCEDURE)

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the eternal exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

[Note 1]

If you have not the 500V insulation resistance meter, use a Tester.

[Note 2]

External exposure metal: Antenna terminal
Earphone jack

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)

1. MODEL NUMBER and VERSION LETTER
   The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.
2. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

IMPORTANT

Inferior silicon grease can damage IC's and transistors.
When replacing an IC's or transistors, use only specified silicon grease (YG6260M).
Remove all old silicon before applying new silicon.

GENERAL SPECIFICATIONS

G-1	**TV System**	CRT	CRT Size / Visual Size	27 inch / 676mmV
			CRT Type	Normal
			Deflection	102 degree
			Magnetic Field BV/BH	+0.45G/0.18G
		Color System		NTSC
		Speaker		2Speaker
			Position	Front
			Size	2.0 x 3.5 Inch
			Impedance	8 ohm
		Sound Output	MAX	2.5 + 2.5 W
			10%(Typical)	2.0 + 2.0 W
		NTSC3.58+4.43 /PAL60Hz		No
G-2	**Tuning System**	Broadcasting System		US System M
		Tuner and Receive CH	System	1Tuner
			Destination	Ohers
			Tuning System	F-Synth
			Input Impedance	VHF/UHF 75 ohm
			CH Coverage	2 - 69, 4A, A-5 - A-1, A - I, J - W, W+1 - W+84
		Intermediate Frequency	Picture(FP)	45.75MHz
			Sound(FS)	41.25MHz
			FP-FS	4.50MHz
		Preset CH		No
		Stereo/Dual TV Sound		Yes
		Tuner Sound Muting		Yes
G-3	**Power**	Power Source	AC	120V AC 60Hz
			DC	-
		Power Consumption	at AC	125 W at AC 120 V 60 Hz
			Stand by (at AC)	4 W at AC 120 V 60 Hz
			Per Year	-- kWh/Year
		Protector	Power Fuse	Yes
G-4	**Regulation**		Safety	UL
			Radiation	FCC
			X-Radiation	DHHS
G-5	**Temperature**		Operation	+5oC ~ +40oC
			Storage	-20oC ~ +60oC
G-6	**Operating Humidity**			Less then 80% RH

GENERAL SPECIFICATIONS

G-7	**On Screen Display**	Menu			Yes
			Menu Type		Icon
			Picture		Yes
				Contrast	Yes
				Brightness	Yes
				Color	Yes
				Tint	Yes
				Sharpness	Yes
			Audio		Yes
				Bass	Yes
				Treble	Yes
				Balance	Yes
				BBE On/Off	No
				Stable Sound On/Off	Yes
			Set Up		Yes
				PIP SOURCE	Yes
				TV/CABLE(CATV)	Yes
				CH Program	Yes
				Add/Erase	Yes
			Option		Yes
				Language	Yes
				V-chip	Yes
				CH Label	Yes
				Favorite CH	Yes
				Color Stream DVD/DTV	Yes
			Control Level		Yes
				Volume	Yes
				Brightness	Yes
				Contrast	Yes
				Color	Yes
				Tint (NTSC Only)	Yes
				Sharpness	Yes
				Tuning	No
				Bass	Yes
				Treble	Yes
				Balance	Yes
				Back Light	No
			Stereo,Audio Output,SAP		Yes
			Video		Yes
			Color Stream		Yes
			Channel(TV/Cable)		Yes
			CH Label		Yes
			Sleep Timer		Yes
			Sound Mute		Yes
			P-in-P		Yes
			V-chip Rating		Yes
G-8	**OSD Language**				English French Spanish
			OSD Language Setting		English
G-9	**Clock and Timer**	Sleep Timer		Max Time	120 Min
				Step	10 Min
		On/Off Timer		Program(On Tim / Off Tim)	No
		Wake Up Timer			No
		Timer Back-up (at Power Off Mode)		more than	-- Min Sec

GENERAL SPECIFICATIONS

G-10	**Remote Control**	Unit		RC-DU
		Glow in Dark Remocon		Yes
		Format		Toshiba
		Custom Code		TV:40-BF h
		Power Source	Voltage(D.C)	3V
			UM size x pcs	UM-4 x 2 pcs
		Total Keys		46 Keys
		Keys	Power	Yes
			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0	Yes
			100	Yes
			CH Up	Yes
			CH Down	Yes
			Volume Up	Yes
			Volume Down	Yes
			TV/Caption/Text	Yes
			CH1/CH2	Yes
			TV/Video(TV/AV)	Yes
			CH RTN/CH ENT(Quick View)	Yes
			Sleep	Yes
			RE Call(Call)	Yes
			Reset	Yes
			Menu/Enter	Yes
			Mute	Yes
			Exit	Yes
			MTS(Audio Select)	Yes
			Fav.Up	Yes
			Fav.Down	Yes
			Set +	No
			Set -	No
		P-in-P Keys	PIP	Yes
			Swap	Yes
			Locate	Yes
			Still	Yes
		2 Tuner P-in-P Only	PIP CH Up	No
			PIP CH Down	No
		Multi Brand Keys	CH Up(VCR)	Yes
			CH Down(VCR)	Yes
			Pause/Still	Yes
			TV/VCR(VCR)	Yes
			Code	Yes
			FF	Yes
			Rew	Yes
			Rec	Yes
			Play	Yes
			Stop	Yes
			TV	Yes
			VCR	Yes
			Cable	Yes

GENERAL SPECIFICATIONS

G-11	Features	Auto Degauss		Yes
		Auto Shut Off		Yes
		Canal+		No
		CATV		Yes
		Anti-theft		No
		Rental		No
		Memory(Last CH)		Yes
		Memory(Last Volume)		Yes
		V-Chip		Yes
			Type	USA,Toshiba Type
		BBE		No
		Auto Search		No
		CH Allocation		No
		SAP		Yes
		Channel Lock		No
		Just Clock Function		No
		Game Position		No
		CH Label		Yes
		VM Circuit		No
		Full OSD		No
		Premiere		No
		Comb Filter		Yes
				2 Lines
		Auto CH Memory		Yes
		Hotel Lock		No
		Closed Caption		Yes
		Stable Sound		Yes
		FBT Leak Test Protect		Yes
		Favorite CH		Yes
		1 Tuner P-in-P		Yes
		2 Tuner P-in-P		No
G-12	Accessories	Owner's Manual	Language	English
			W/ Warranty	Yes
		Remote Control Unit		Yes
		Rod Antenna		No
			Poles	
			Terminal	
		Loop Antenna		No
			Terminal	
		U/V Mixer		No
		DC Car Cord (Center+)		No
		Guarantee Card		No
		Warning Sheet		No
		Circuit Diagram		No
		Antenna Change Plug		No
		Service Facility List		No
		Important Safety Instruction		Yes
		Dew/AHC Caution Sheet		No
		AC Plug Adapter		No
		Quick Set-up Sheet		No
		Battery		Yes
			UM size x pcs	UM4 size x 2
			OEM Brand	No
		AC Cord		No
		AV Cord (2Pin-1Pin)		No
		Registration Card (NDL Card)		Yes
		ESP Card		Yes
		PTB Sheet		No
		300 ohm to 75 ohm Antenna Adapter		No

GENERAL SPECIFICATIONS

G-13	**Interface**	Switch	Front	Power	Yes
				System Select	No
				Main Power SW	No
				Sub Power	No
				Channel Up	Yes
				Channel Down	Yes
				Volume Up	Yes
				Volume Down	Yes
			Rear	AC/DC	No
				TV/CATV Selector	No
				Degauss	No
				Main Power SW	No
		Indicator		Power	Yes
				Stand-by	No
				On Timer	No
		Terminals	Front	Video Input	RCA
				Audio Input	RCA x 2
				Other Terminal	No
			Rear	Video Input(Rear1)	RCA
				Video Input(Rear2)	RCA
				Audio Input(Rear1)	RCA x 2
				Audio Input(Rear2)	RCA x 2
				Video Output	RCA
				Audio Output	RCA x 2
				S- Input	Yes
				Euro Scart	No
				Color Stream	RCA x 3
				Diversity	No
				Ext Speaker	No
				DC Jack 12V(Center +)	No
				VHF/UHF Antenna Input	F Type
				AC Outlet	No
G-14	**Set Size**			Approx. W x D x H (mm)	650 x 500.5 x 560
G-15	**Weight**			Net (Approx.)	35kg (77.1 lbs)
				Gross (Approx.)	38Kg (83.7 lbs)
G-16	**Carton**		Master Carton		No
				Content	---- Sets
				Material	-- /--
				Dimensions W x D x H(mm)	-- x -- x --
				Description of Origin	No
			Gift Box		Yes
				Material	Double/Brown
				Dimensions W x D x H(mm)	718 x 580 x 655
				Design	As per Buyer's
				Description of Origin	Yes
			Drop Test		Natural Dropping At 1 Corner / 3 Edges / 6 Surfaces
				Height (cm)	31
			Container Stuffing		192 Sets/40' container
G-17	**Cabinet Material**			Cabinet Front	PS 94V0 DECABROM
				Cabinet Rear	PS 94V0

DISASSEMBLY INSTRUCTIONS

1. REMOVAL OF ANODE CAP

Read the following **NOTED** items before starting work.

* After turning the power off there might still be a potential voltage that is very dangerous. When removing the Anode Cap, make sure to discharge the Anode Cap's potential voltage.
* Do not use pliers to loosen or tighten the Anode Cap terminal, this may cause the spring to be damaged.

REMOVAL

1. Follow the steps as follows to discharge the Anode Cap. **(Refer to Fig. 1-1.)**
   Connect one end of an Alligator Clip to the metal part of a flat-blade screwdriver and the other end to ground.
   While holding the plastic part of the insulated Screwdriver, touch the support of the Anode with the tip of the Screwdriver.
   A cracking noise will be heard as the voltage is discharged.

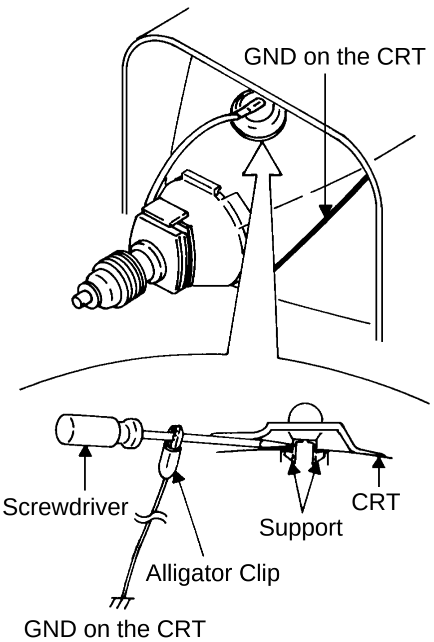


Fig. 1-1

2. Flip up the sides of the Rubber Cap in the direction of the arrow and remove one side of the support. **(Refer to Fig. 1-2.)**

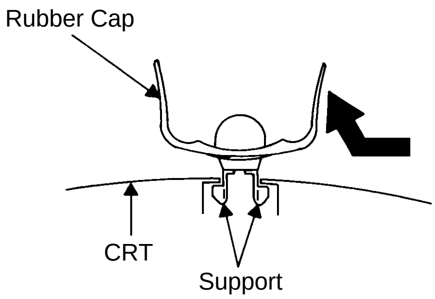


Fig. 1-2

3. After one side is removed, pull in the opposite direction to remove the other.

NOTE

Take care not to damage the Rubber Cap.

INSTALLATION

1. Clean the spot where the cap was located with a small amount of alcohol. **(Refer to Fig. 1-3.)**

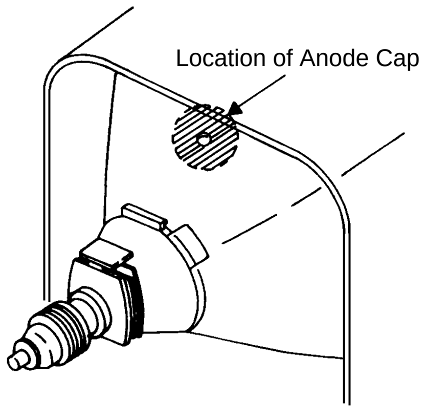
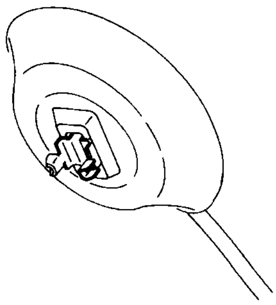


Fig. 1-3

NOTE

Confirm that there is no dirt, dust, etc. at the spot where the cap was located.

2. Arrange the wire of the Anode Cap and make sure the wire is not twisted.
3. Turn over the Rubber Cap. **(Refer to Fig. 1-4.)**


Fig. 1-4

4. Insert one end of the Anode Support into the anode button, then the other as shown in **Fig. 1-5**.

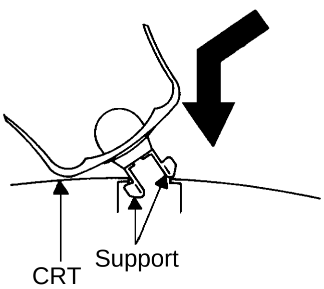


Fig. 1-5

5. Confirm that the Support is securely connected.
6. Put on the Rubber Cap without moving any parts.

DISASSEMBLY INSTRUCTIONS

2. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put the Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. **(Refer to Fig. 2-1.)**

   NOTE

   Masking is carried out on all the parts located within 10 mm distance from IC leads.

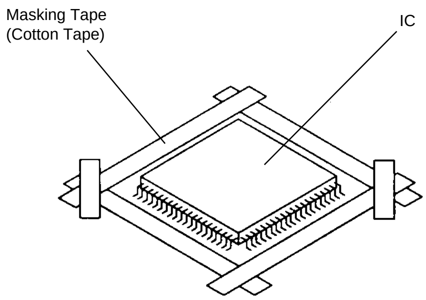


Fig. 2-1

2. Heat the IC leads using a blower type IC desoldering machine. **(Refer to Fig. 2-2.)**

   NOTE

   Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.

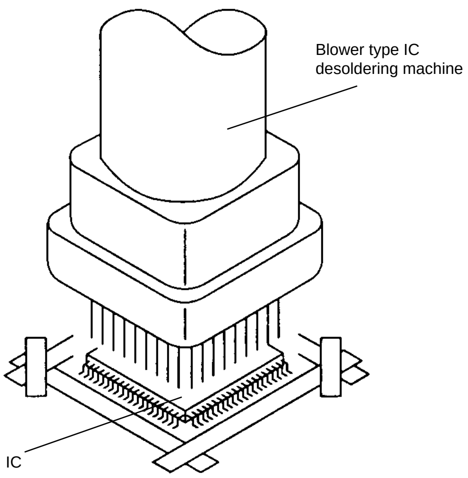


Fig. 2-2

3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using a tweezers and remove the IC by moving with the IC desoldering machine. **(Refer to Fig. 2-3.)**

   NOTE

   Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.

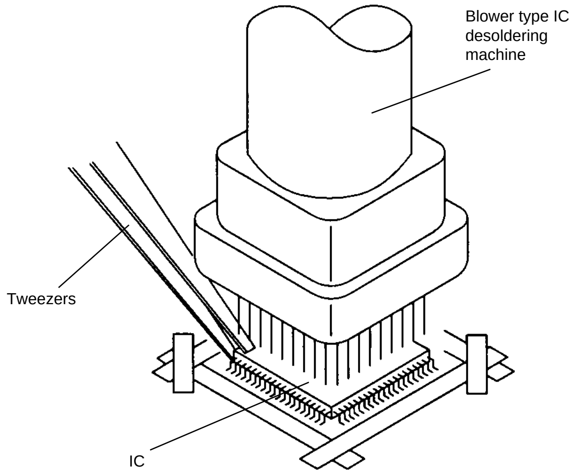


Fig. 2-3

4. Peel off the Masking Tape.

5. Absorb the solder left on the pattern using the Braided Shield Wire. **(Refer to Fig. 2-4.)**

   NOTE

   Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.

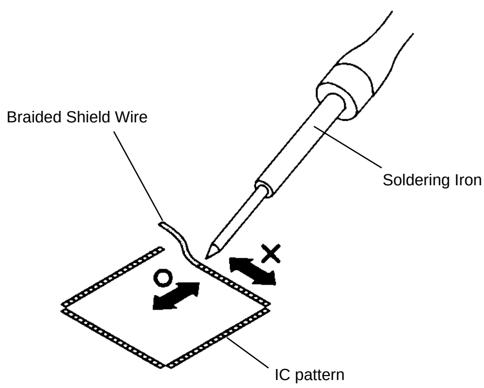


Fig. 2-4

DISASSEMBLY INSTRUCTIONS

INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. **(Refer to Fig. 2-5.)**

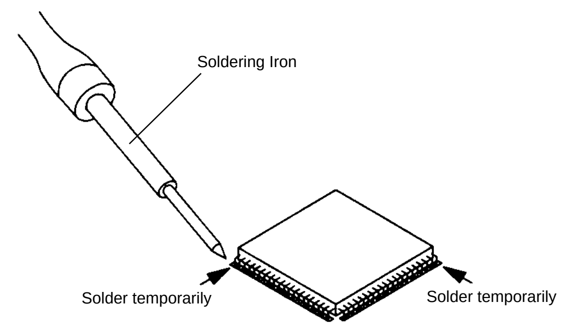


Fig. 2-5

2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. **(Refer to Fig. 2-6.)**

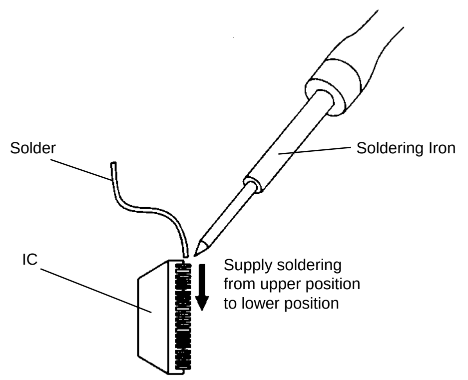


Fig. 2-6

3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 2-7.)**

   NOTE

   Do not absorb the solder to excess.

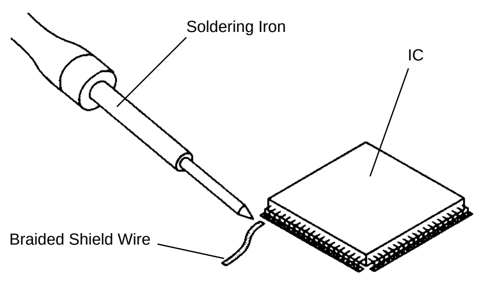


Fig. 2-7

4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 2-8.)**

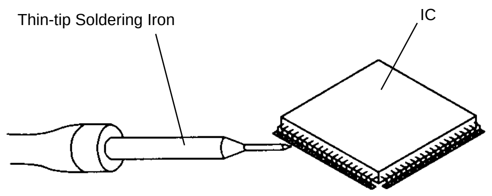


Fig. 2-8

5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass.
   Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

   NOTE

   When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, be always sure to replace the IC in this case.

SERVICE MODE LIST

This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily.
To enter the Service Mode, press both set key and remote control key for more than 1 second.

Set Key	Remocon Key	Operations
VOL. (-) MIN	0	Releasing of V-CHIP PASSWORD.
VOL. (-) MIN	1	Initialization of the factory. NOTE: Do not use this for the normal servicing.
VOL. (-) MIN	6	POWER ON total hours is displayed on the screen. Refer to the "CONFIRMATION OF USING HOURS". Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "NOTE FOR THE REPLACING OF MEMORY IC".
VOL. (-) MIN	8	Writing of EEPROM initial data. NOTE: Do not use this for the normal servicing.
VOL. (-) MIN	9	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).

CONFIRMATION OF USING HOURS

POWER ON total hours can be checked on the screen. Total hours are displayed in 16 system of notation.

1. Set the VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 1 second.
3. After the confirmation of using hours, turn off the power.

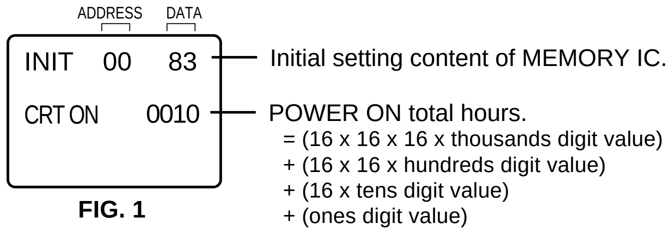


FIG. 1

NOTE FOR THE REPLACING OF MEMORY IC

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	A9	C3	37	30	31	B3	27	17	2B	80	F4	C4	00	00	00	5F
10	0F	00	89	28	80	27	40	83	43	00	10	0E	61	63	64	26
20	67	69	2A	6B	6C	6D	6E	6F	70	71	52	72	53	73	54	74
30	55	75	75	56	56	76	76	57	57	77	77	58	58	78	78	59
40	59	79	79	5A	5A	7A	7A	5B	5B	7B	7B	5C	5C	7C	7C	5D
50	5D	7D	7D	5E	5E	7E	7E	5F	5F	5F	7F	7F	---	---	---	---

Table 1

1. Enter DATA SET mode by setting VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 1 second. ADDRESS and DATA should appear as FIG 1.
3. ADDRESS is now selected and should "blink". Using the VOL. UP/DOWN button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
4. Press ENTER to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using VOL. UP/DOWN button until required DATA value has been selected.
6. Pressing ENTER will take you back to ADDRESS for further selection if necessary.
7. Repeat steps 3 to 6 until all data has been checked.
8. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

The unit will now have the correct DATA for the new MEMORY IC.

ELECTRICAL ADJUSTMENTS

1. BEFORE MAKING ELECTRICAL ADJUSTMENTS

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

- Use an isolation transformer when performing any service on this chassis.
- Before removing the anode cap, discharge electricity because it contains high voltage.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
  Inferior silicon grease can damage IC's and transistors.
- When replacing IC's and transistors, use only specified silicon grease.
  Remove all old silicon before applying new silicon.

Prepare the following measurement tools for electrical adjustments.

1. Oscilloscope
2. Digital Voltmeter
3. AC Voltmeter

On-Screen Display Adjustment

1. In the condition of NO indication on the screen.
   Press the VOL. DOWN button on the set and the Channel button **(9)** on the remote control for more than 1 second to appear the adjustment mode on the screen as shown in **Fig. 1-1**.

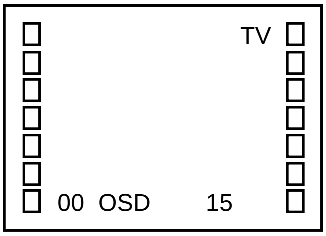


Fig. 1-1

2. Use the Channel UP/DOWN button or Channel button **(0-9)** on the remote control to select the options shown in **Fig. 1-2**.
3. Press the MENU button on the remote control to end the adjustments.

NO.	FUNCTION	NO.	FUNCTION
00	OSD H	24	TRAPEZIU
01	CUT OFF	25	COR TOP
02	RF. AGC	26	COR BTM
03	---	27	V EHT
04	H. POSI	28	H EHT
05	V. POSI	29	FM. LVL
06	H. SIZE	30	LEVEL
07	V. SIZE	31	SEP1
08	V. CENT	32	SEP2
09	V. LIN	33	T. STE
10	VS. CORR	35	V POS U
11	G. DRV	36	V POS L
12	B. DRV	37	H POS L
13	R. BIAS	38	H POS R
14	G. BIAS	39	H. SIZE
15	B. BIAS	40	V. SIZE
16	BRI	41	H. POSI
17	SUBCONT	42	R
18	UNI COL	43	G
19	---	44	B
20	TINT	45	BRI
21	SHARP	46	COL
22	RGB CONT	47	TINT
23	PARABOLA	48	VCO

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: CONSTANT VOLTAGE

1. Set condition is AV MODE without signal.
2. Connect the digital voltmeter to **TP002**.
3. Adjust the **VR502** until the digital voltmeter is 135 $\pm$ 0.5V.

2-2: RF AGC

1. Receive the VHF LOW (61dB).
2. Connect the digital voltmeter between the **TP001** and the **GND**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(02)** on the remote control to select "RF. AGC".
4. Press the VOL. UP/DOWN button on the remote control until the digital voltmeter is 2.4V.

2-3: CUT OFF

1. Adjust the unit to the following settings.
   G. DRIVE=64, B. DRIVE=64, R. BIAS=15, G. BIAS=15, B. BIAS=15, BRIGHT=75, UNI COLOR=64
2. Place the set with Aging Test for more than 15 minutes.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(01)** on the remote control to select "CUT OFF".
4. Adjust the **Screen Volume** until a dim raster is obtained.

2-4: WHITE BALANCE

NOTE: Adjust after performing CUT OFF adjustment.

1. Place the set with Aging Test for more than 10 minutes.
2. Receive the white 100% signal from the Pattern Generator.
3. Using the adjustment control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(13)** on the remote control to select "R. BIAS".
5. Using the VOL. UP/DOWN button on the remote control, adjust the R. BIAS.
6. Press the CH. UP/DOWN button on the remote control to select the "G. DRV", "B. DRV", "G. BIAS" or "B. BIAS".
7. Using the VOL. UP/DOWN button on the remote control, adjust the G. DRV, B. DRV, G. BIAS or B. BIAS.
8. Perform the above adjustments 6 and 7 until the white color is looked like a white.

2-5: FOCUS

1. Receive a 70dB monoscope pattern.
2. Turn the Focus Volume fully counterclockwise once.
3. Adjust the **Focus Volume** until picture is distinct.

2-6: HORIZONTAL POSITION

1. Receive the center cross signal from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(04)** on the remote control to select "H. POSI".
4. Press the VOL. UP/DOWN button on the remote control until the right and left screen size of the vertical line becomes the same.

ELECTRICAL ADJUSTMENTS

2-7: VERTICAL LINEARITY

NOTE: Adjust after performing adjustments in section 2-6.

1. Receive the center cross signal from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(09)** on the remote control to select "V. LIN".
4. Press the VOL. UP/DOWN button on the remote control until the upside and downside screen size of the horizontal line becomes the same.

2-8: VERTICAL POSITION

NOTE: Adjust after performing adjustments in section 2-7.

1. Receive the center cross signal from the Pattern Generator.
2. Adjust the **VR401** until the horizontal line becomes fit to the notch of the shadow mask.

2-9: VERTICAL SIZE

NOTE: Adjust after performing adjustments in section 2-8.

1. Receive the crosshatch signal from the Pattern Generator.
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(07)** on the remote control to select "V. SIZE".
3. Press the VOL. UP/DOWN button on the remote control until the rectangle on the center of the screen becomes square.
4. Receive a broadcast and check if the picture is normal.

2-10: OSD HORIZONTAL

1. Activate the adjustment mode display of **Fig. 1-1**.
2. Press the VOL. UP/DOWN button on the remote control until the difference of A and B becomes minimum. **(Refer to Fig. 2-1)**

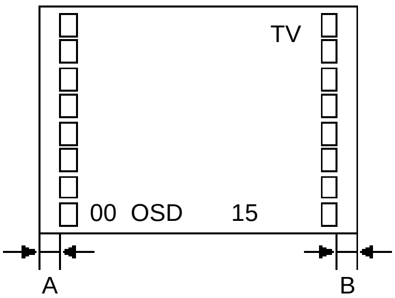


Fig. 2-1

2-11: LEVEL

1. Receive the VHF HIGH (70dB).
2. Connect the AC voltmeter to **TP901**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(30)** on the remote control to select "LEVEL".
4. Press the VOL. UP/DOWN button on the remote control until the AC voltmeter is 75 ± 2mV.

2-12: SEPARATION 1, 2

1. Receive the stereo signal (L=2KHz, R=400Hz).
2. Connect the AC voltmeter to **AUDIO OUT JACK** though stereo filter (L=400Hz, R=2KHz).
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(31)** on the remote control to select "SEP1".
4. Press the VOL. UP/DOWN button on the remote control until the output of L-CH and R-CH become minimum.
5. Press the CH UP button once the set to "SEP2" mode.
6. Press the VOL. UP/DOWN button on the remote control until the output of L-CH and R-CH become minimum.
7. Press the CH DOWN button once the set to "SEP1" mode.
8. Repeat step 4 to step 7 several times.
   The output difference of the between with Filter and without Filter should be more than 25dB for both L and R.

2-13: BRIGHTNESS

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(16)** on the remote control to select "BRI".
2. Press the VOL. UP/DOWN button on the remote control until the brightness step No. becomes "92"
3. Press the TV/VIDEO button on the remote control to set to the AV mode. Then perform the above adjustments 1~2.
4. Press the TV/VIDEO button on the remote control to set to the CS mode.
5. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(16)** on the remote control to select "BRI".
6. Press the VOL. UP/DOWN button on the remote control until the brightness step No. becomes "90"

2-14: UNI-COLOR

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(18)** on the remote control to select "UNI COL".
2. Press the VOL. UP/DOWN button on the remote control until the contrast step No. becomes "53"
3. Press the TV/VIDEO button on the remote control to set to the AV mode. Then perform the above adjustments 1~2.
4. Press the TV/VIDEO button on the remote control to set to the CS mode.
5. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(18)** on the remote control to select "UNI COL".
6. Press the VOL. UP/DOWN button on the remote control until the contrast step No. becomes "54"

ELECTRICAL ADJUSTMENTS

2-15: SUB TINT/SUB COLOR

1. Receive the color bar pattern. (RF Input)
2. Connect the oscilloscope to **TP806**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(20)** on the remote control to select "TINT".
4. Press the VOL. UP/DOWN button on the remote control until the waveform becomes as shown in **Fig. 2-2**.
5. Connect the oscilloscope to **TP804**.
6. Press the CH DOWN button 3 times to set to "SUBCONT" mode.
7. Press the VOL. UP/DOWN button on the remote control until the red color level is adjusted to 105 ± 5% of the white level. **(Refer to Fig. 2-3)**
8. Receive the color bar pattern. (Audio Video Input)
9. Press the TV/VIDEO button on the remote control to set to the AV mode. Then perform the above adjustments 2~7.
10. Press the TV/VIDEO button on the remote control to set to the CS mode.
11. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(20)** on the remote control to select "TINT".
12. Press the VOL. UP/DOWN button on the remote control to increase the step numbers by 6 steps to the AV.
13. Press the CH DOWN button 3 times to set to "SUBCONT" mode.
14. Press the VOL. UP/DOWN button on the remote control to set the same step number as the AV.

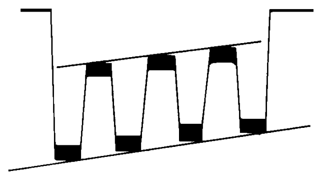


Fig. 2-2

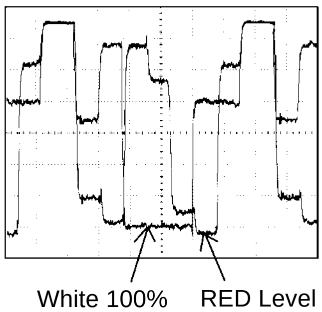


Fig. 2-3

2-16: PIP HORIZONTAL POSITION

1. Receive the center cross signal from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(41)** on the remote control to select "H. POSI".
4. Press the VOL. UP/DOWN button on the remote control until the right and left screen size of the vertical line becomes the same.

2-17: PIP VERTICAL POSITION U

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(35)** on the remote control to select "V. POS U".
4. Press the VOL. UP/DOWN button on the remote control until the value from the PIP screen frame to the shadow mask becomes 20(+3, -0)mm. **(Refer to Fig. 2-4)**

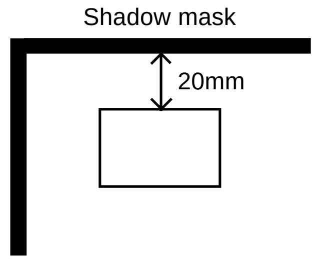


Fig. 2-4

2-18: PIP VERTICAL POSITION L

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(36)** on the remote control to select "V. POS L".
4. Press the VOL. UP/DOWN button on the remote control until the value from the PIP screen frame to the shadow mask becomes 20(+3, -0)mm. **(Refer to Fig. 2-5)**

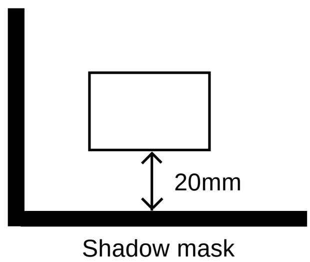


Fig. 2-5

ELECTRICAL ADJUSTMENTS

2-19: PIP HORIZONTAL POSITION L

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(37)** on the remote control to select "H. POSI".
4. Press the VOL. UP/DOWN button on the remote control until the value from the PIP screen frame to the shadow mask becomes 35(+3, -0)mm.
   (Refer to Fig. 2-6)

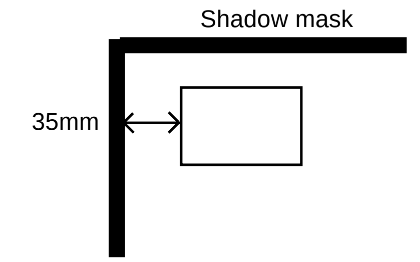


Fig. 2-6

2-20: PIP HORIZONTAL POSITION R

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(38)** on the remote control to select "H. POS R".
4. Press the VOL. UP/DOWN button on the remote control until the value from the PIP screen frame to the shadow mask becomes 35(+3, -0)mm.
   (Refer to Fig. 2-7)

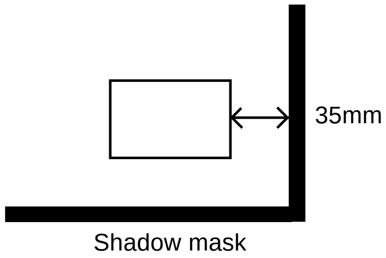


Fig. 2-7

2-21: PIP R, G, B LEVEL

1. Set condition is TV MODE without signal.
2. Connect the oscilloscope to **pin 16 of IC751**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(42)** on the remote control to select "R".
4. Press the VOL. UP/DOWN button on the remote control until the waveform value becomes 0.9 ± 0.04V.
   (Refer to Fig. 2-8)
5. Connect the oscilloscope to **pin 11 of IC751**.
6. Press the CH UP button once to set to "G" mode.
7. Press the VOL. UP/DOWN button on the remote control until the waveform value becomes 0.9 ± 0.04V.
   (Refer to Fig. 2-8)
8. Press the VOL. DOWN button on the remote control to decrease the step numbers by 2 steps.
9. Connect the oscilloscope to **pin 8 of IC751**.
10. Press the CH UP button once to set to "B" mode.
11. Press the VOL. UP/DOWN button on the remote control until the waveform value becomes 0.9 ± 0.04V.
   (Refer to Fig. 2-8)

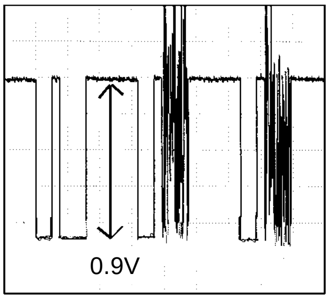


Fig. 2-8

2-22: Confirmation of Fixed Value (Step No.)

Please check if the fixed values of the each adjustment items are set correctly referring below.

NO.	FUNCTION	RF	AV	CS	S
05	V. POSI	00	---	---	---
06	H. SIZE	00	---	---	---
08	V. CENT	32	---	---	---
10	VS. CORR	12	---	---	---
21	SHARP	30	30	30	---
22	RGB CONT	19	---	---	---
23	PARABOLA	00	---	---	---
24	TRAPEZIU	00	---	---	---
25	COR TOP	00	---	---	---
26	COR BTM	00	---	---	---
27	V EHT	00	---	---	---
28	H EHT	00	---	---	---
29	FM. LVL	01	---	---	---
39	H. SIZE	55	---	---	---
40	V. SIZE	68	---	---	---
45	BRIGHT	31	31	---	31
46	COLOR	18	18	---	18
47	TINT	27	30	---	31

* To switch the AV mode of the PIP screen, press the channel button "77" on the remote control.
To switch the S terminal input mode of the PIP screen, press the channel button "77" on the remote control after S terminal input.

ELECTRICAL ADJUSTMENTS

3. PURITY AND CONVERGENCE ADJUSTMENTS

NOTE

1. Turn the unit on and let it warm up for at least 30 minutes before performing the following adjustments.
2. Place the CRT surface facing east or west to reduce the terrestrial magnetism.
3. Turn ON the unit and demagnetize with a Degauss Coil.

3-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. **(Refer to Fig. 3-1)**
   If the deflection yoke and magnet are in one body, untighten the screw for the body.
2. Receive the green raster pattern from the color bar generator.
3. Slide the deflection yoke until it touches the funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

3-2: PURITY

NOTE

Adjust after performing adjustments in section 3-1.

1. Receive the green raster pattern from color bar generator.
2. Adjust the pair of 2-Y pole magnets so the magnets is at just down position.
3. Adjust the pair of 2-X pole magnets to center the color on the screen.
   Adjust the pair of 2-X pole magnets so the color at the ends are equally wide.
4. Move the deflection yoke backward (to neck side) slowly, and stop it at the position when the whole screen is green.
5. Confirm red and blue colors.
6. Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

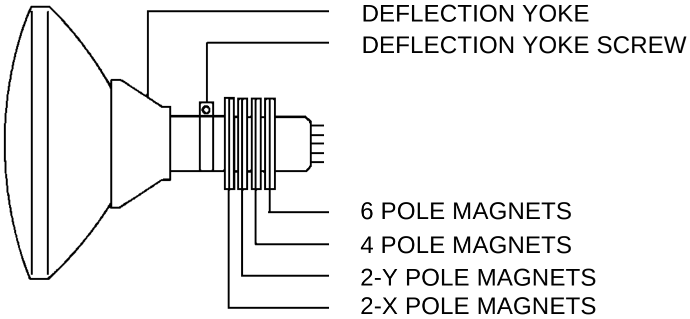


Fig. 3-1

3-3: STATIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-2.

1. Receive the crosshatch pattern from the color bar generator.
2. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

3-4: DYNAMIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-3.

1. Adjust the differences around the screen by moving the deflection yoke upward/downward and right/left. **(Refer to Fig. 3-2-a)**
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. **(Refer to Fig. 3-2-b)**

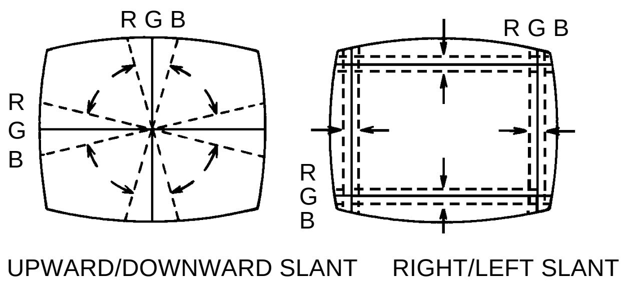
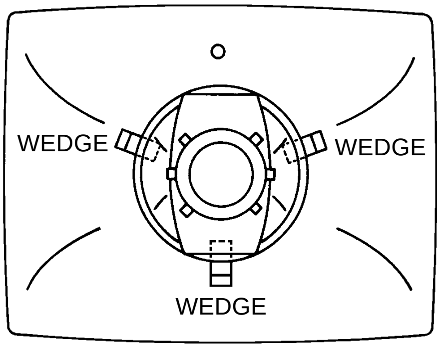


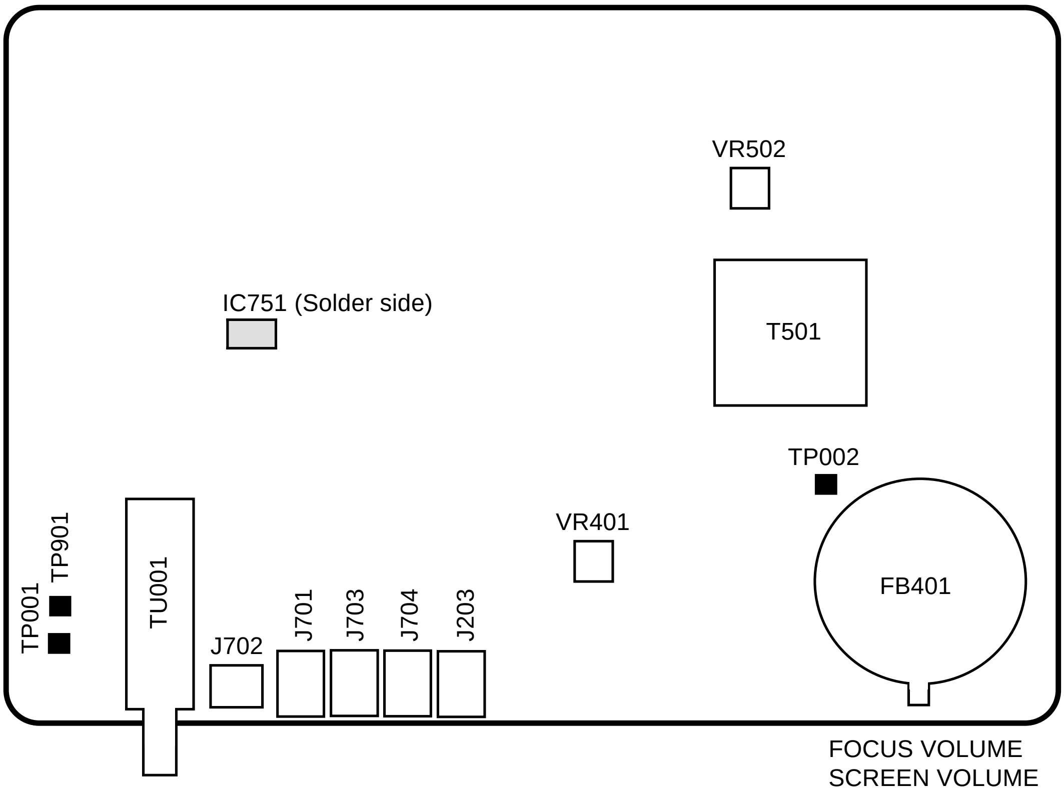
Fig. 3-2-a



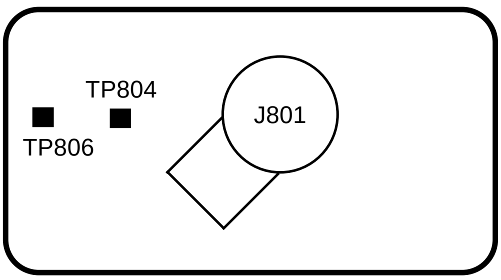
WEDGE POSITION

Fig. 3-2-b

MAJOR COMPONENTS LOCATION GUIDE

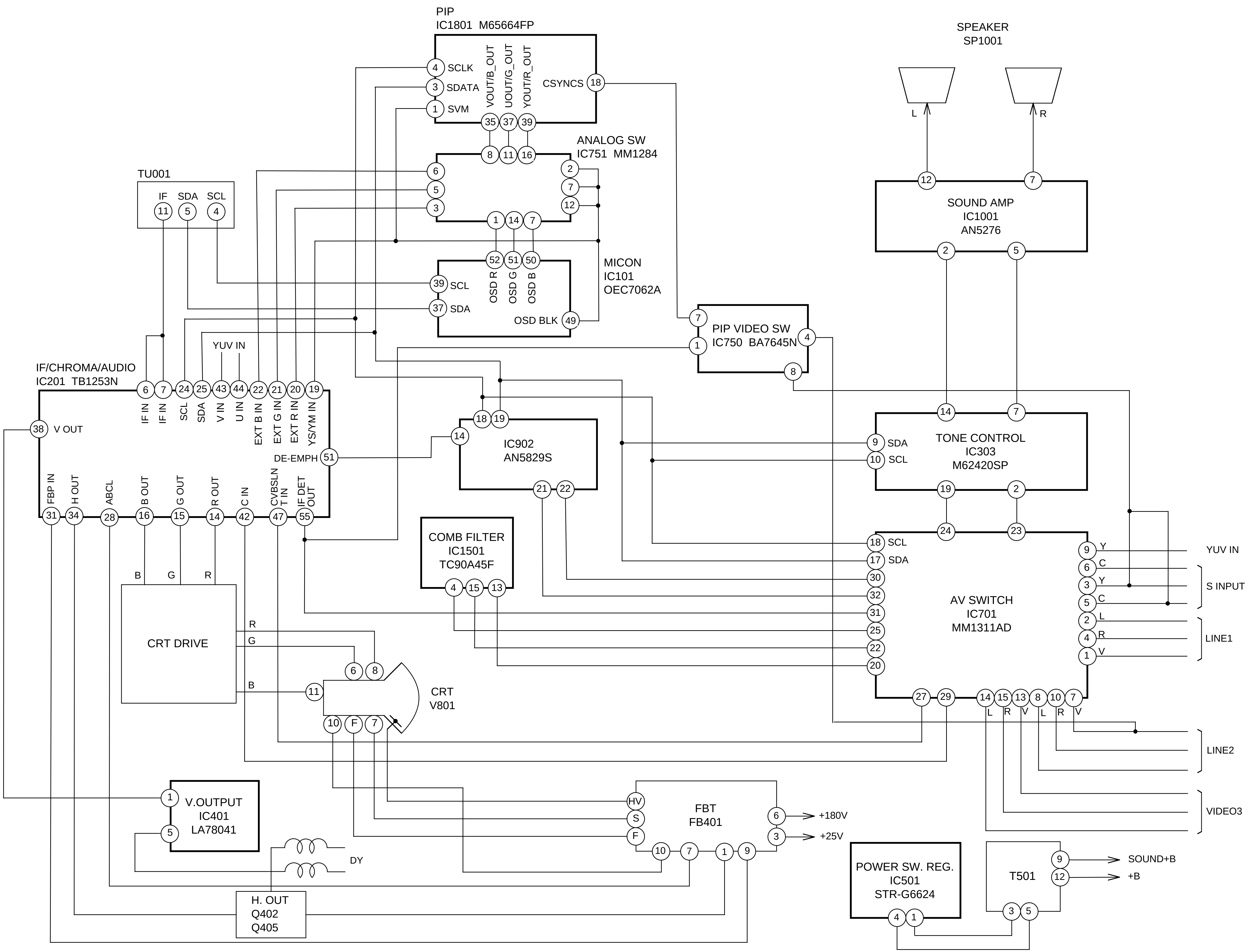


MAIN PCB

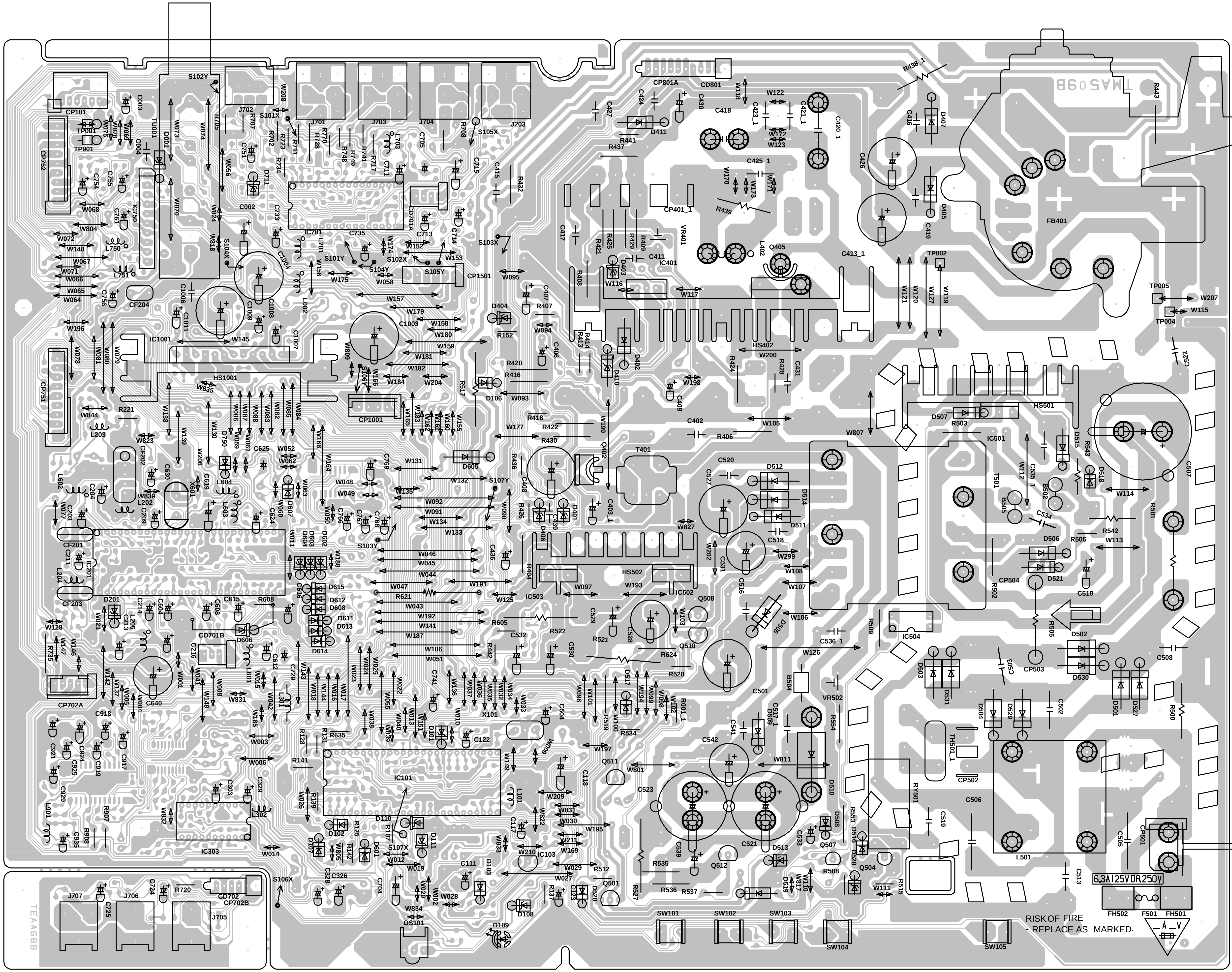


CRT PCB

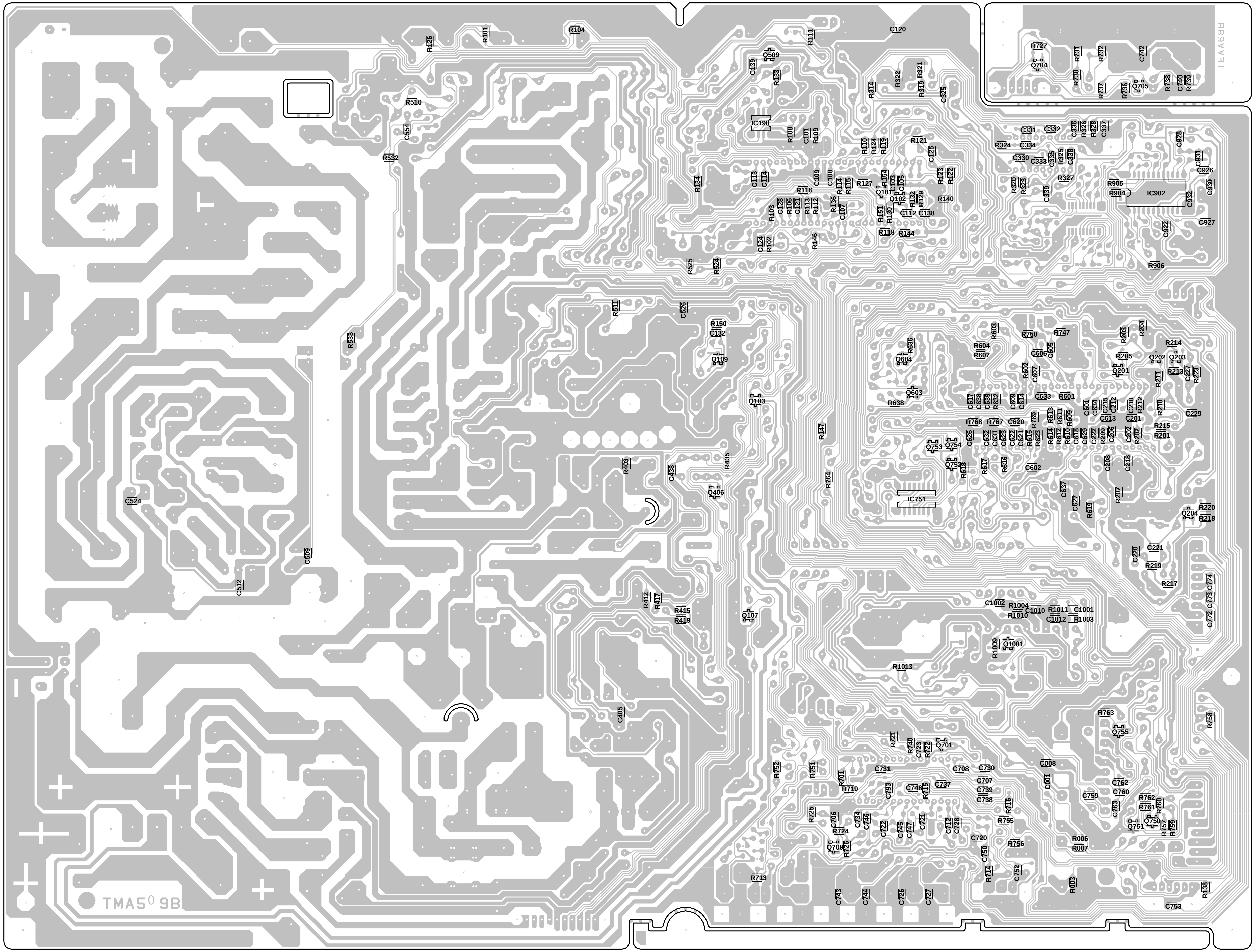
TV BLOCK DIAGRAM



PRINTED CIRCUIT BOARDS
MAIN/VIDEO JACK (INSERTED PARTS)
SOLDER SIDE

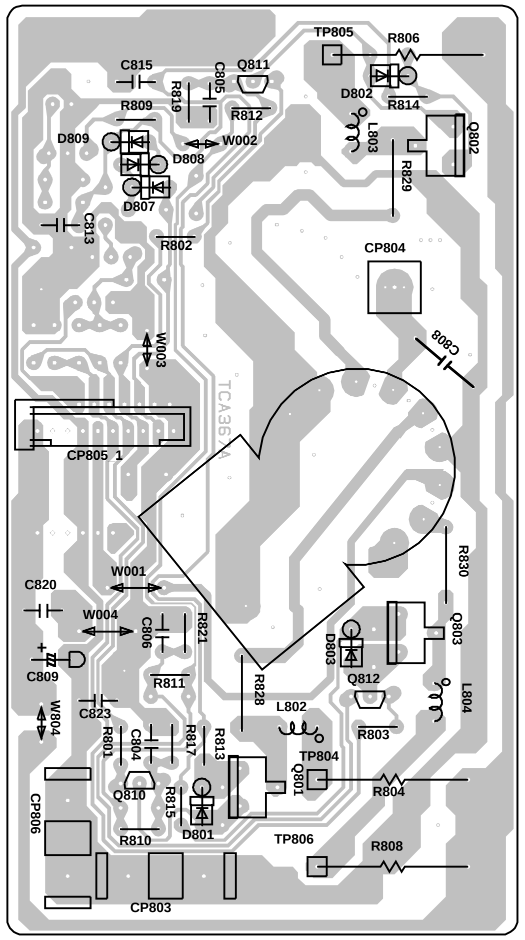


PRINTED CIRCUIT BOARDS
MAIN/VIDEO JACK (CHIP MOUNTED PARTS)
SOLDER SIDE



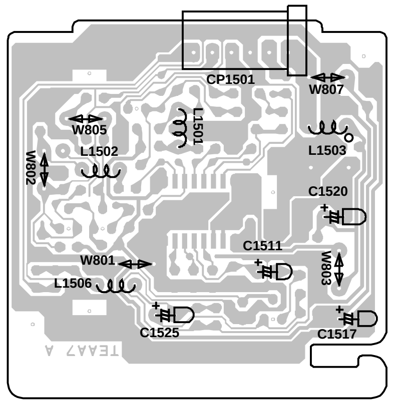
PRINTED CIRCUIT BOARDS

CRT
SOLDER SIDE

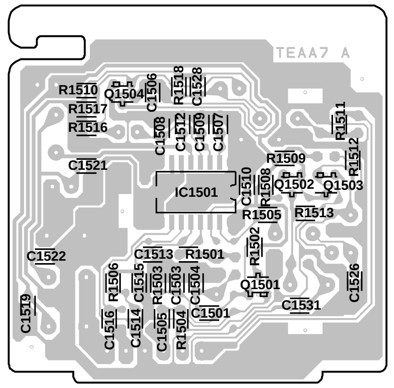


COMB

(INSERTED PARTS)
SOLDER SIDE

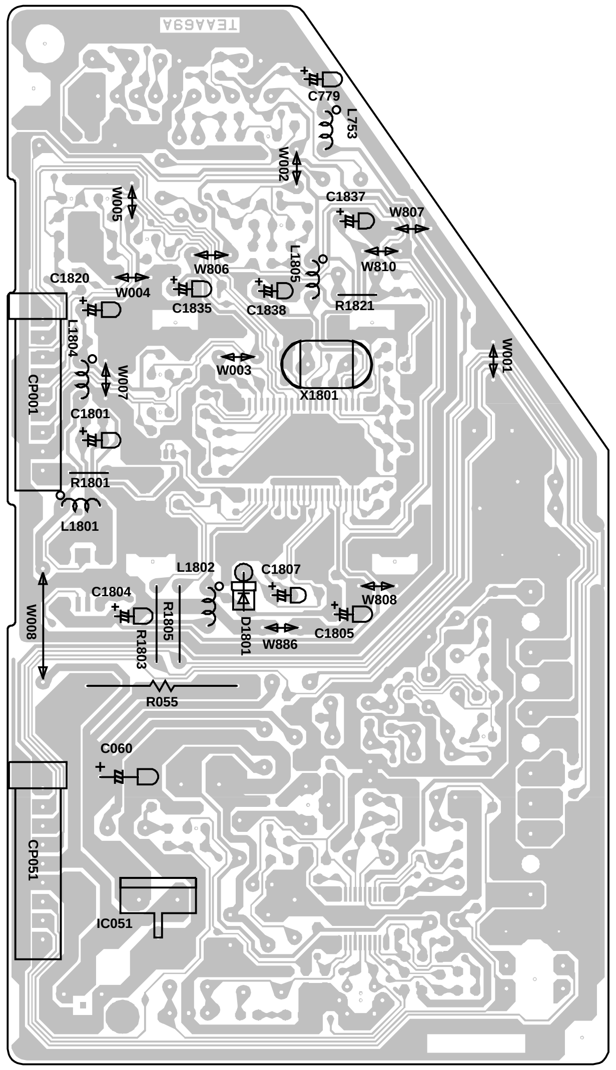


(CHIP MOUNTED PARTS)
SOLDER SIDE

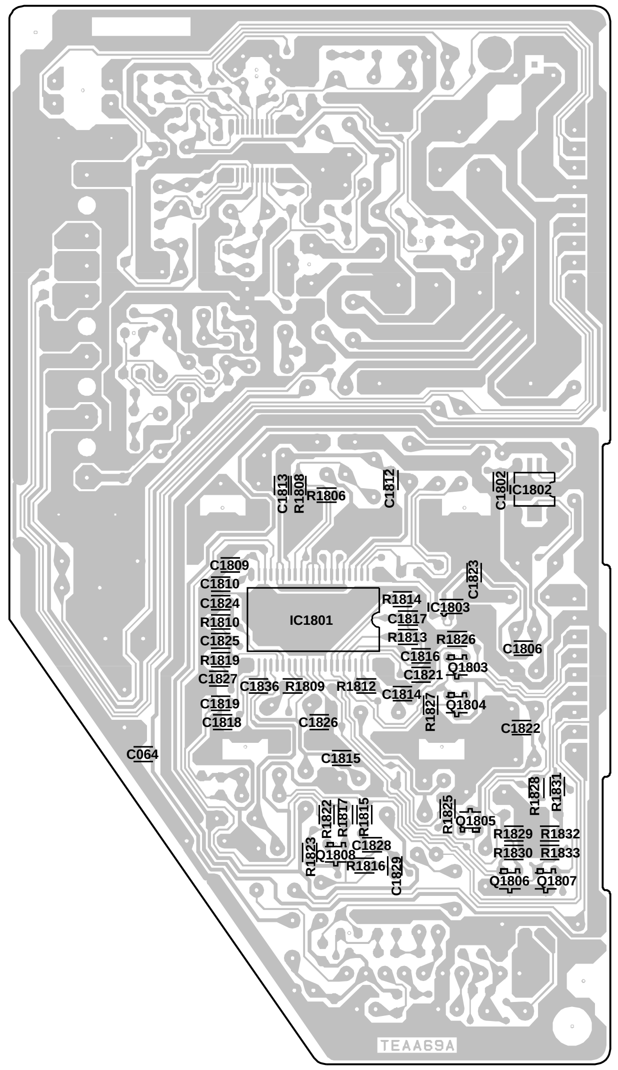


P-IN-P

(INSERTED PARTS)
SOLDER SIDE

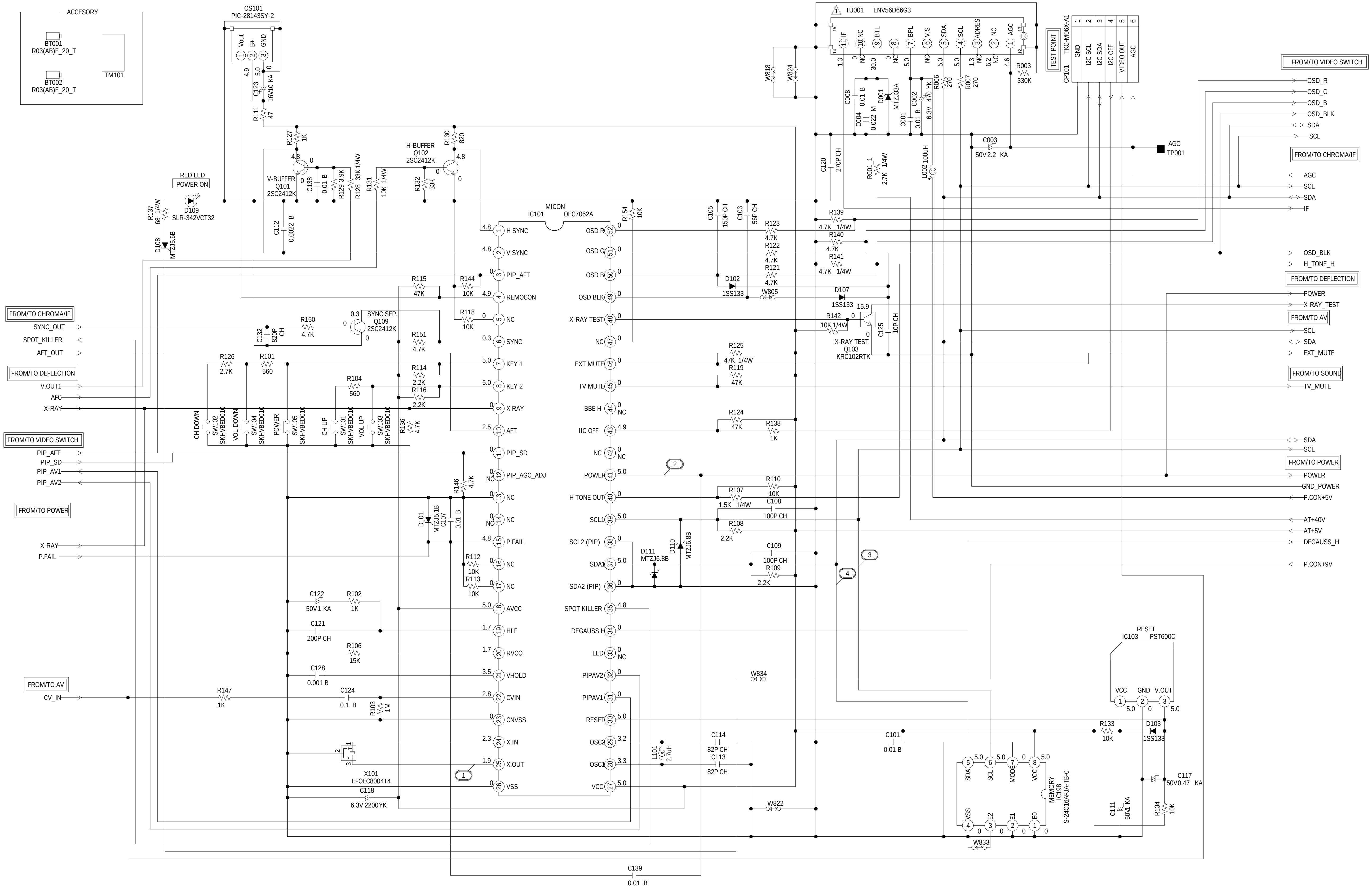


(CHIP MOUNTED PARTS)
SOLDER SIDE



MICON / TUNER SCHEMATIC DIAGRAM

(MAIN PCB)



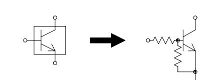
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

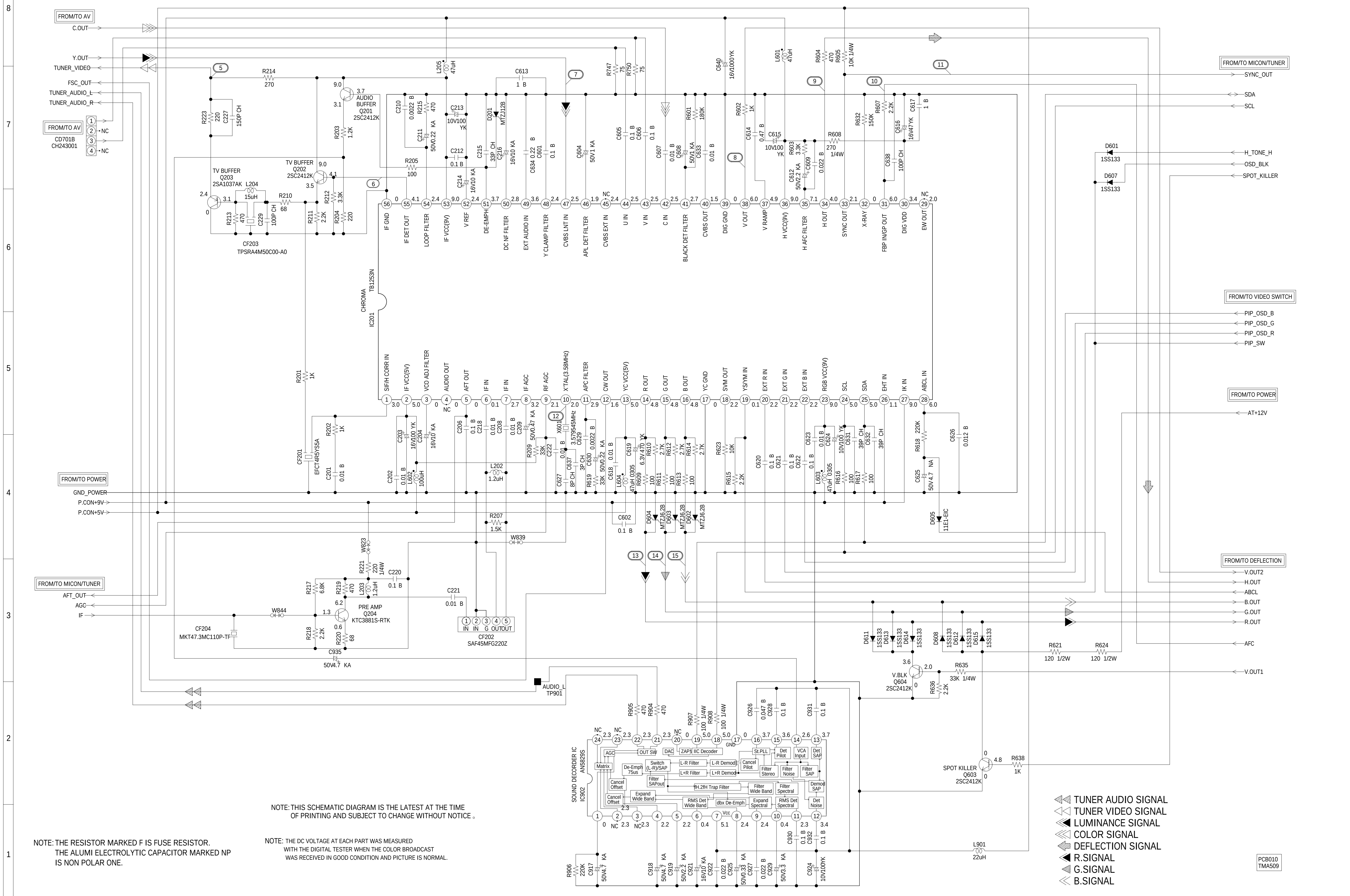
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION: DIGITAL TRANSISTOR



PCB010 TMA509

CHROMA / IF SCHEMATIC DIAGRAM (MAIN PCB)



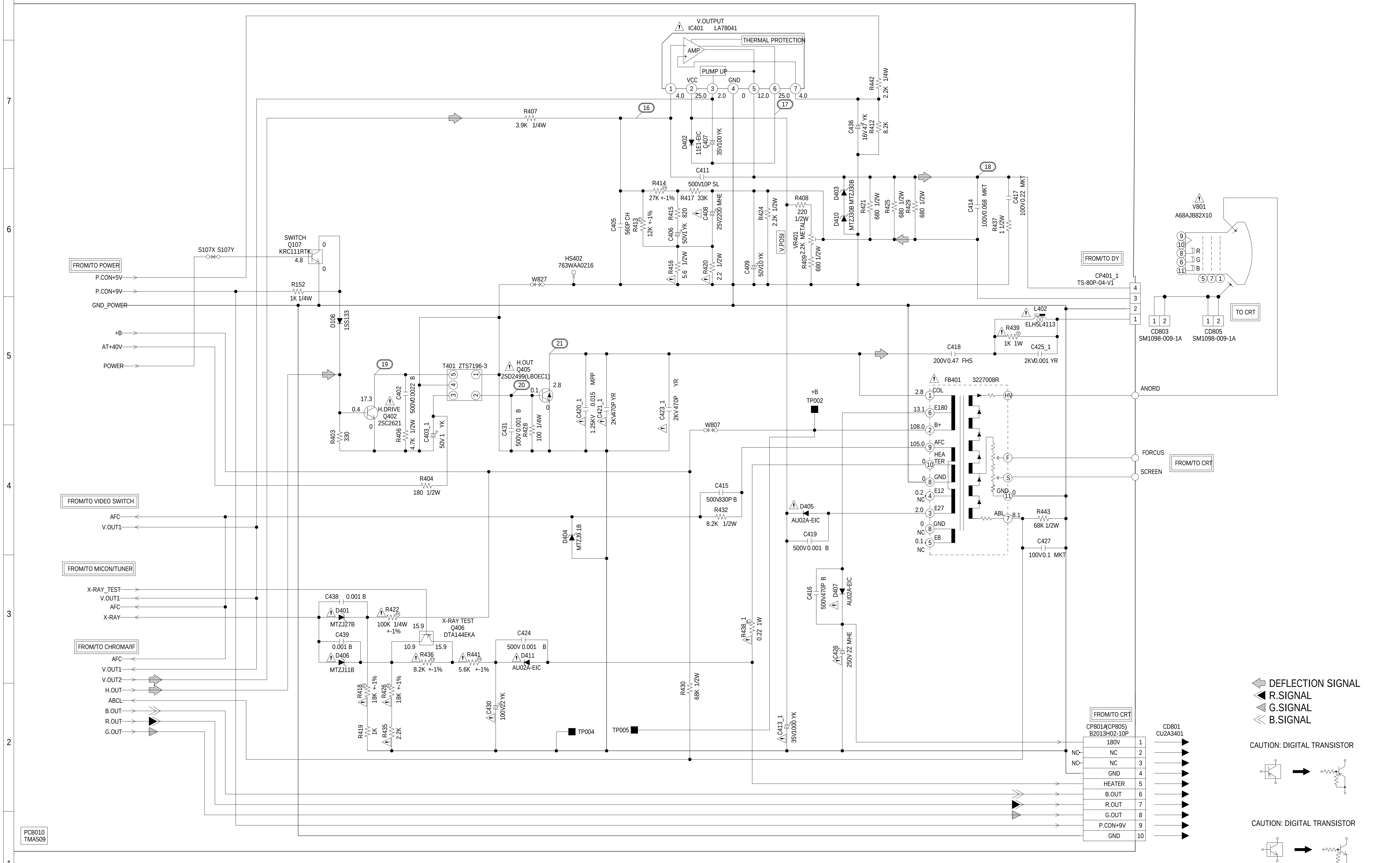
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR.
THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

DEFLECTION SCHEMATIC DIAGRAM

(MAIN PCB)



NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

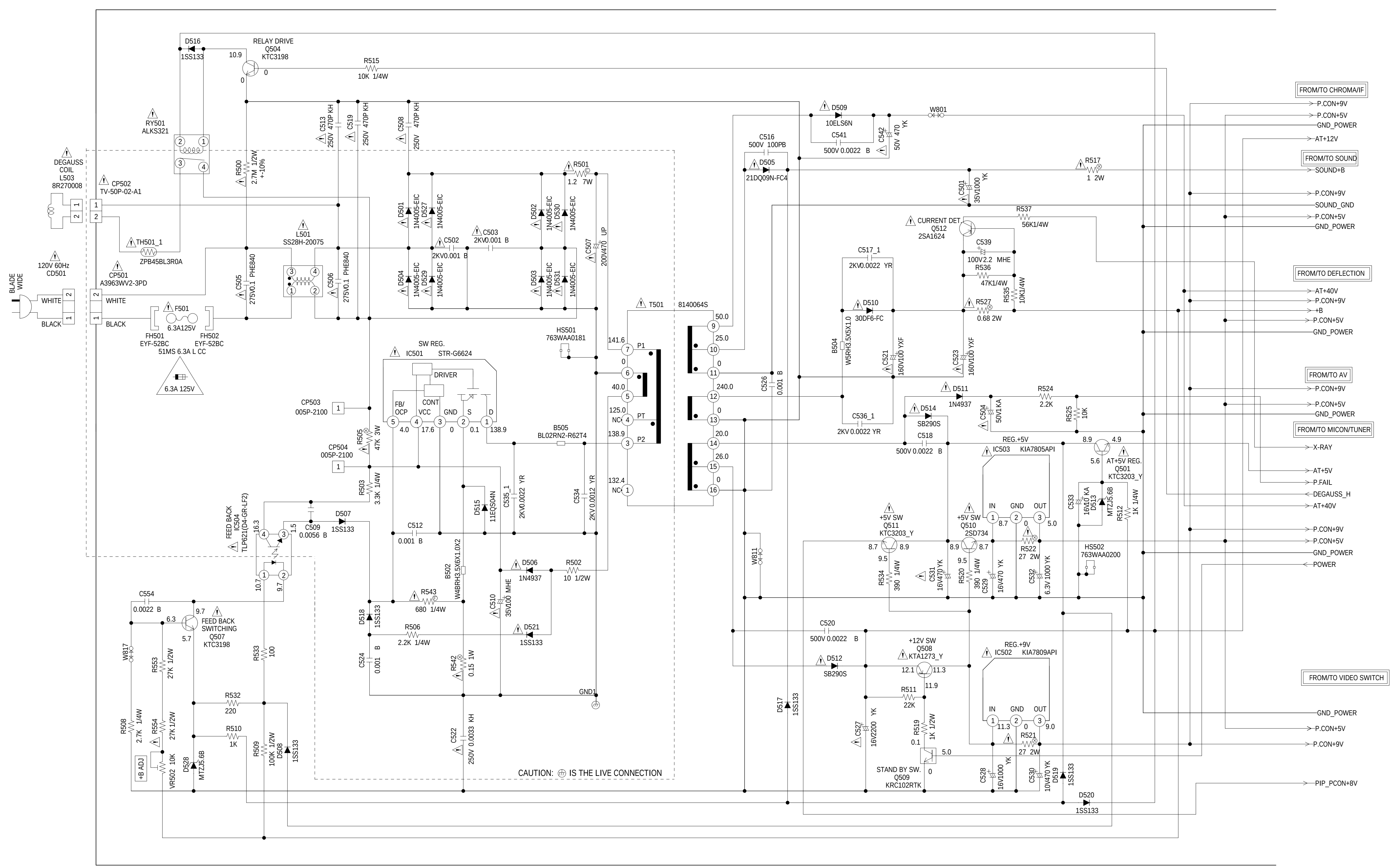
NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE 6.3A 125V(F501)

ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE N'UTILISER QUE DES FUSIBLE DE MEME TYPE 6.3A 125V(F501)

POWER SCHEMATIC DIAGRAM

(MAIN PCB)



NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

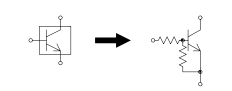
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

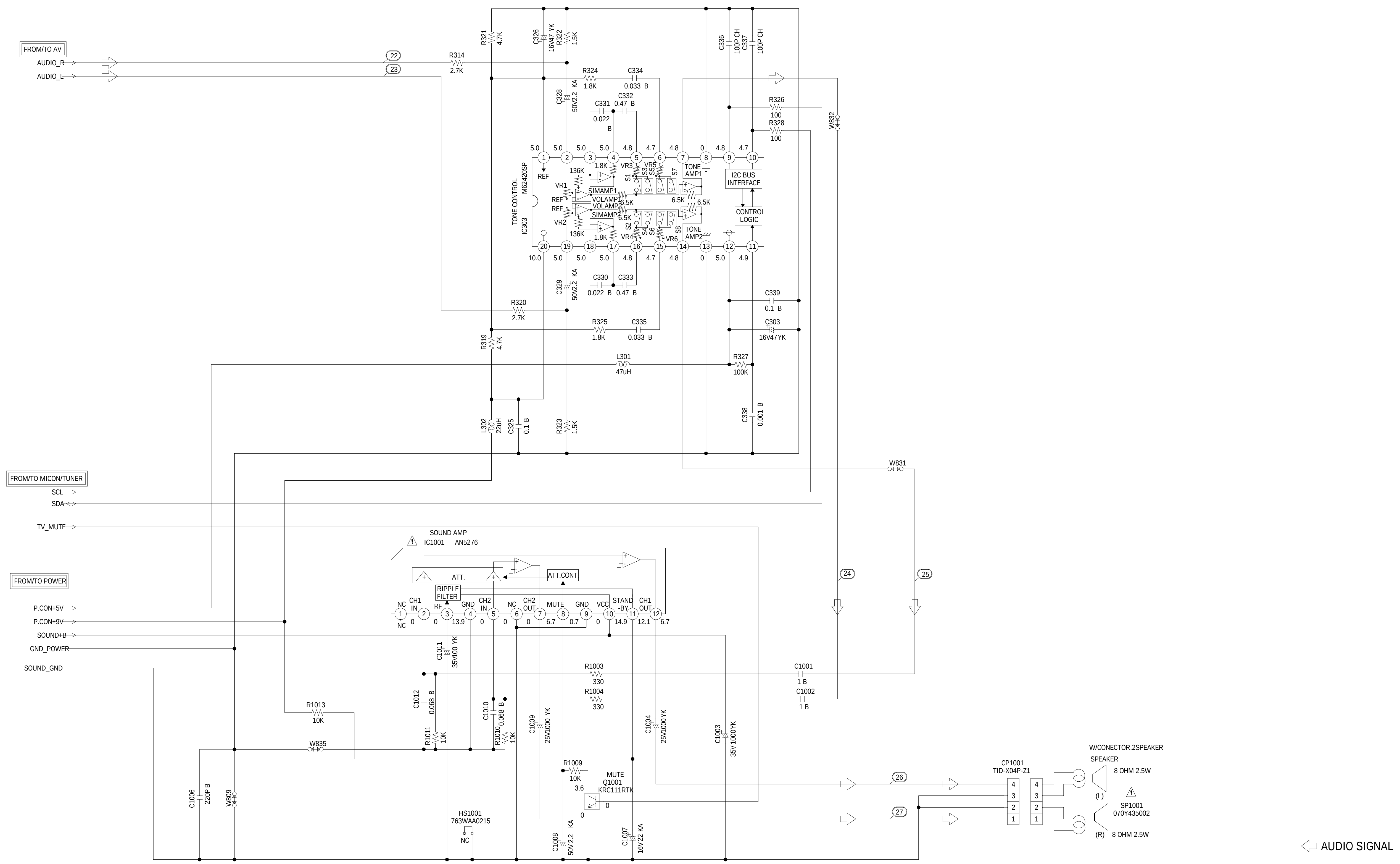
CAUTION: DIGITAL TRANSISTOR



PCB010
TMA509

SOUND SCHEMATIC DIAGRAM

(MAIN PCB)



NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

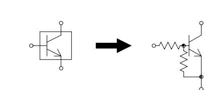
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES,

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR.
THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

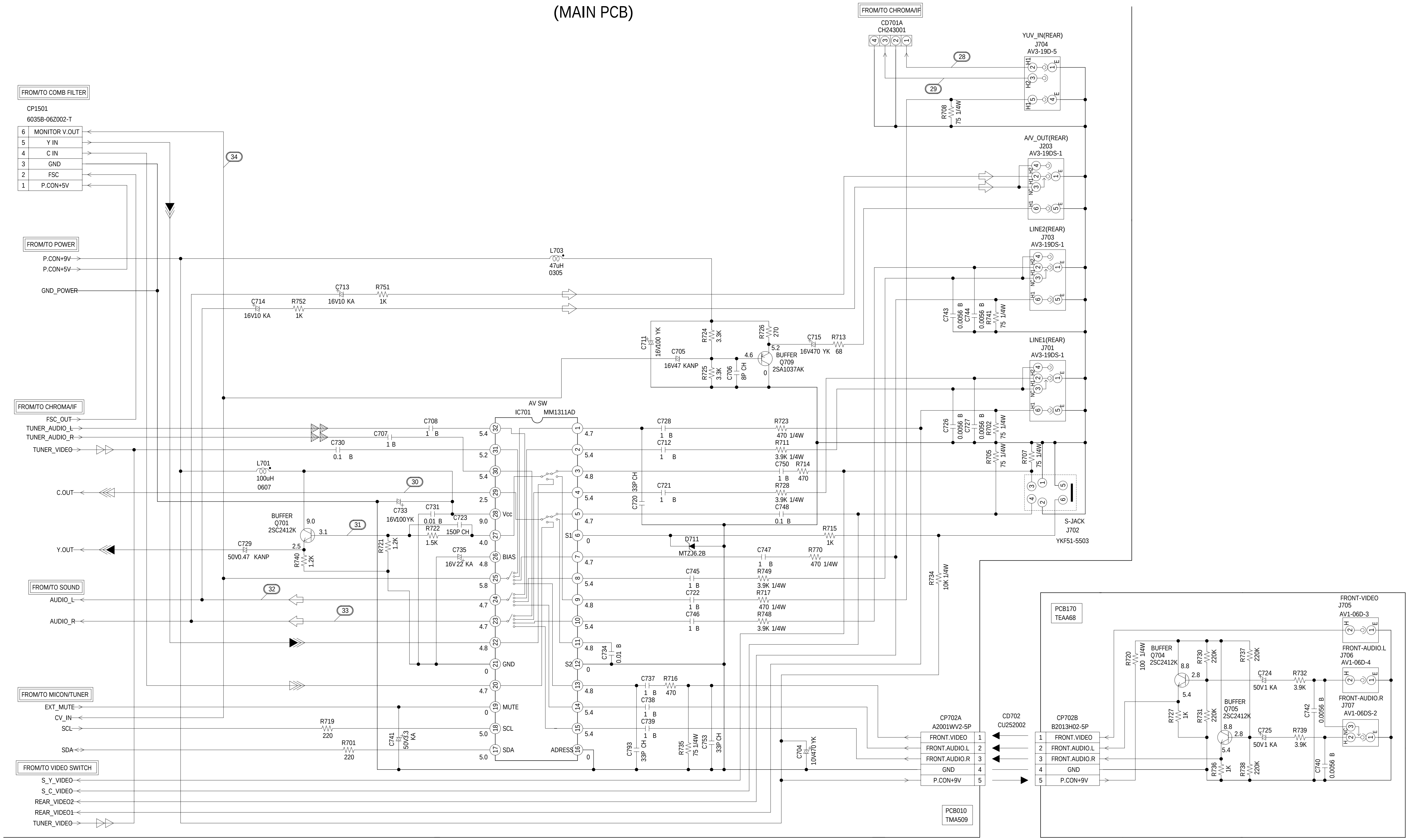
CAUTION: DIGITAL TRANSISTOR



PCB010
TMA509

AV SCHEMATIC DIAGRAM

(MAIN PCB)



NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR.
THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

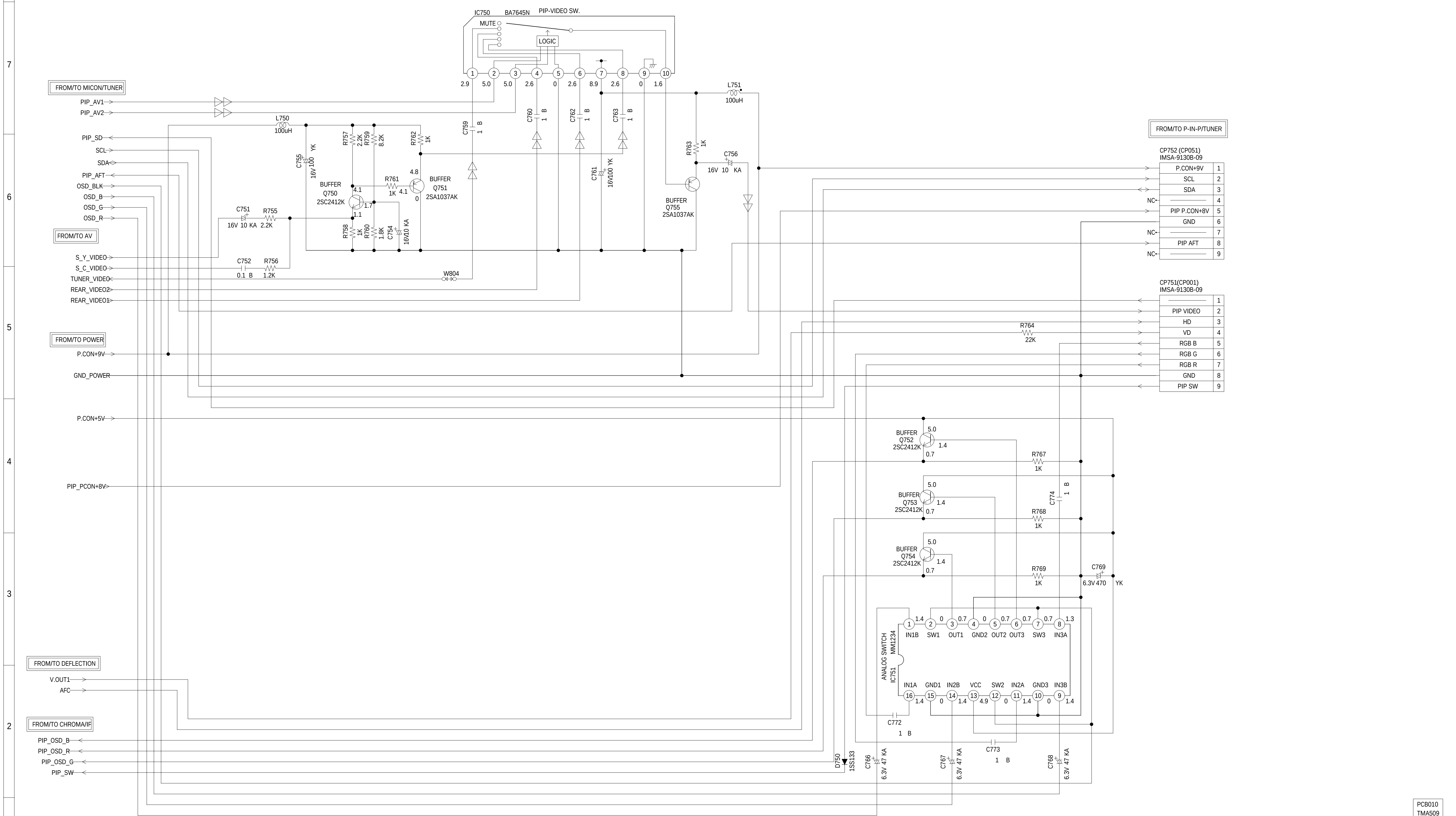
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

- AUDIO SIGNAL
- TUNER AUDIO SIGNAL
- TUNER VIDEO SIGNAL
- COLOR SIGNAL
- LUMINANCE SIGNAL

VIDEO SWITCH SCHEMATIC DIAGRAM

(MAIN PCB)

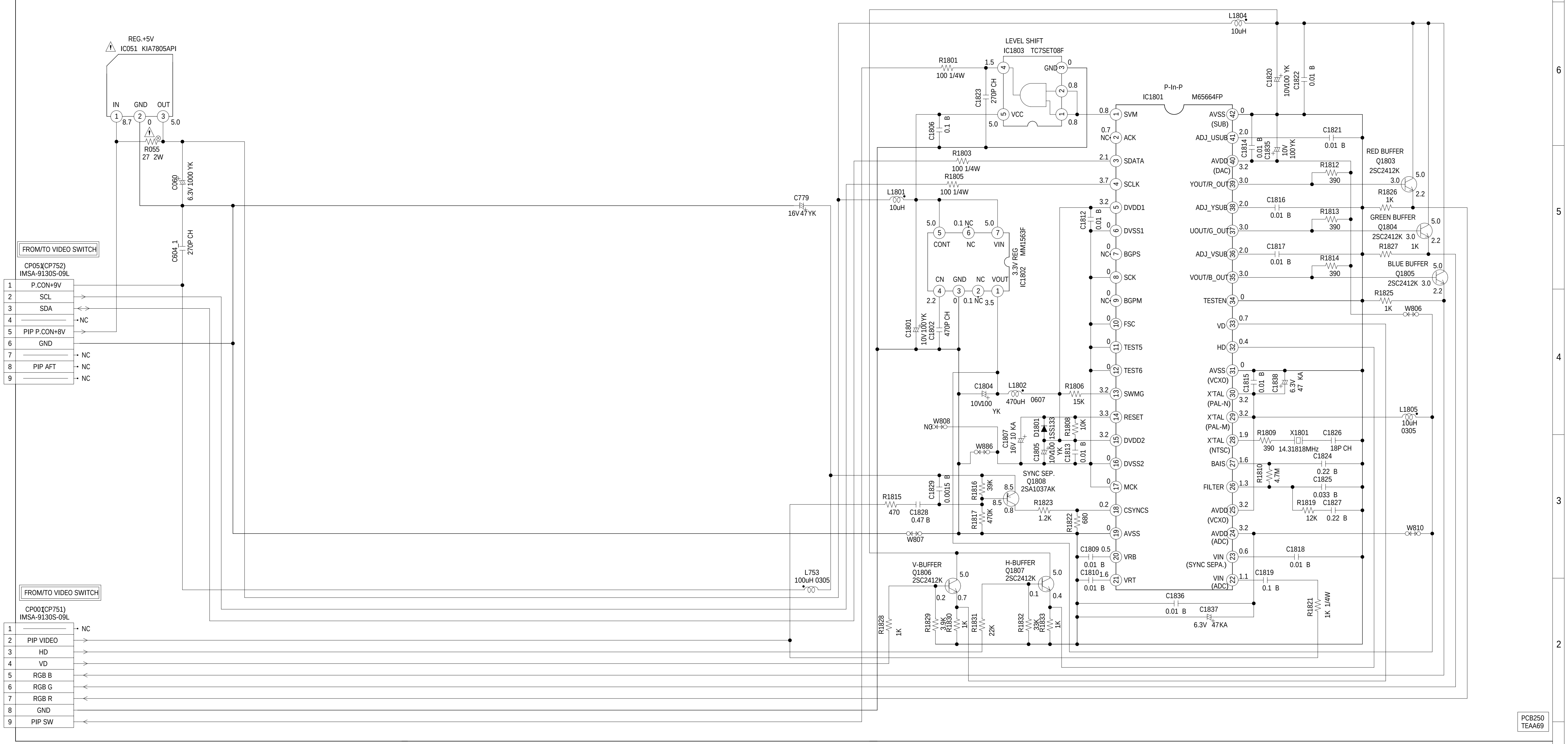


NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

◁◁ TUNER VIDEO SIGNAL

PICTURE IN PICTURE SCHEMATIC DIAGRAM (P-IN-P PCB)



NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR.
THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP
IS NON POLAR ONE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

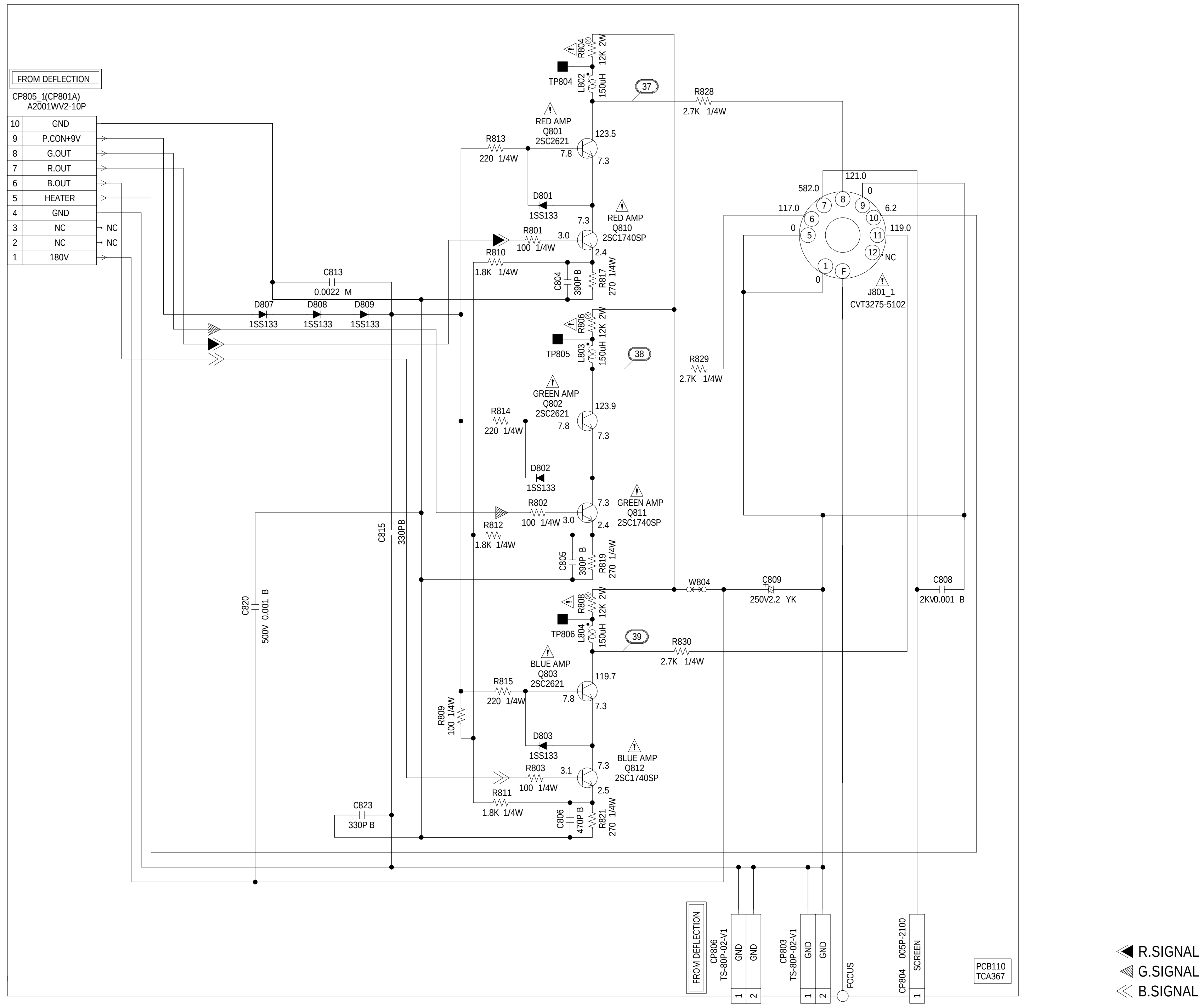
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE
CRITICAL FOR SAFETY,USE ONES
DESCRIBED IN PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT
DANGEREUSES AN POINT DE VUE SECURITE
N'UTILISER QUE CELLS DECRITES
DANS LA NOMENCLATURE DES PIECES.

CRT SCHEMATIC DIAGRAM

(CRT PCB)



NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

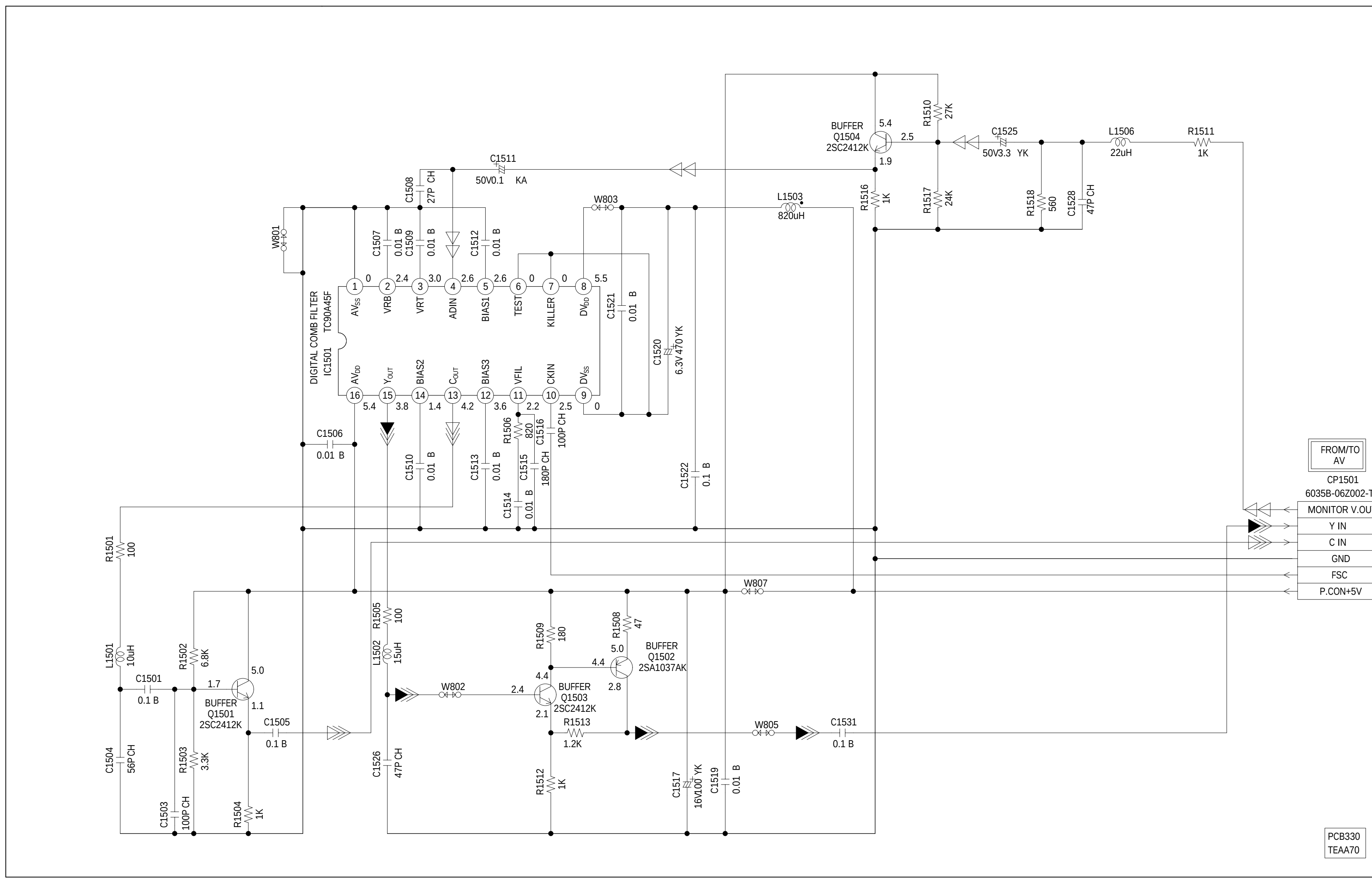
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

DIGITAL COMB FILTER SCHEMATIC DIAGRAM

(COMB PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

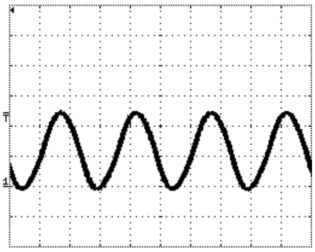
RECORD COLOR SIGNAL

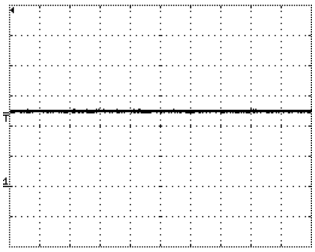
RECORD LUMINANCE SIGNAL

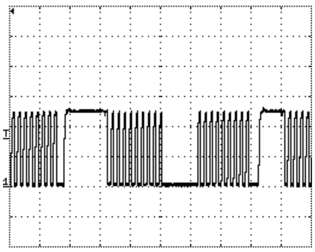
TUNER VIDEO SIGNAL

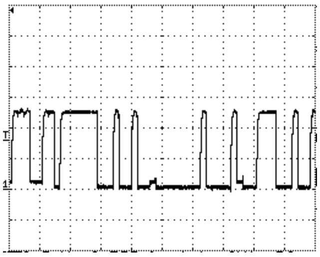
WAVEFORMS

MICON/TUNER

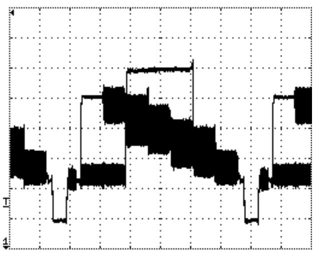

① 2.0V 50ns/div

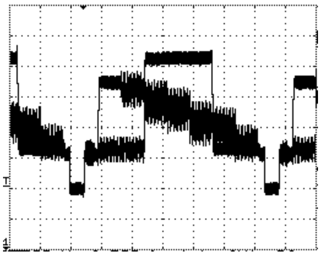

② 2.0V 50ns/div

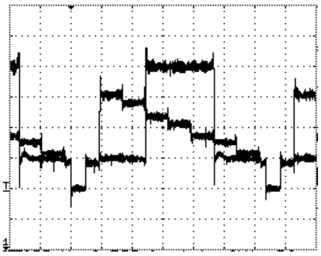

③ 2.0V 50μs/div

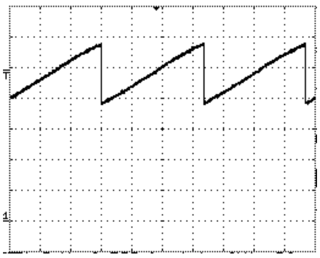

④ 2.0V 50μs/div

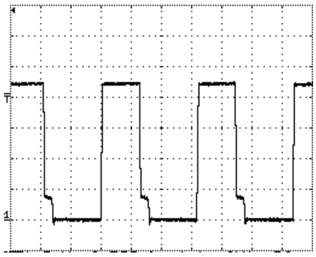
CHROMA/IF

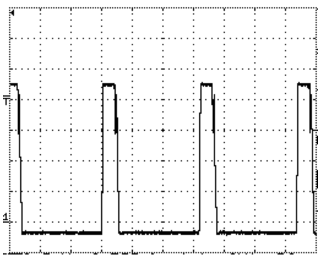

⑤ 200mV 10μs/div

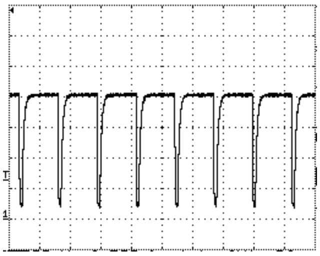

⑥ 500mV 10μs/div

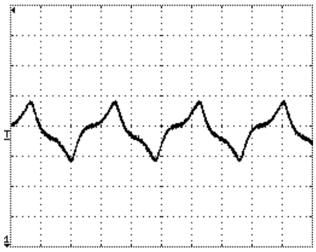

⑦ 200mV 10μs/div

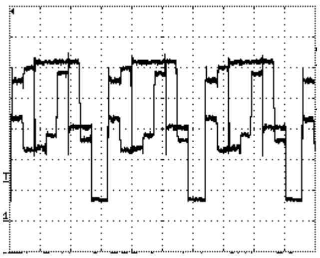

⑧ 1.0V 5ms/div

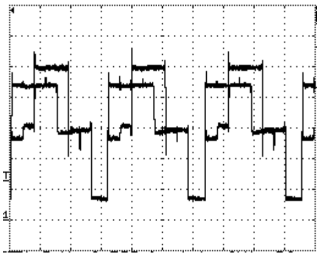

⑨ 1.0V 20μs/div

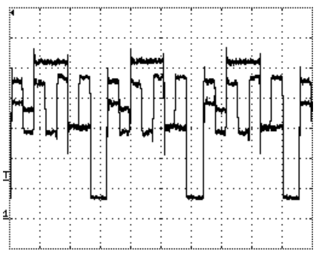

⑩ 2.0V 20μs/div


⑪ 500mV 50μs/div


⑫ 100mV 100ns/div


⑬ 1.0V 20μs/div

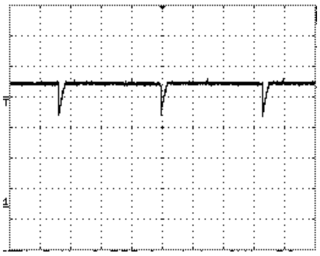

⑭ 1.0V 20μs/div


⑮ 1.0V 20μs/div

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

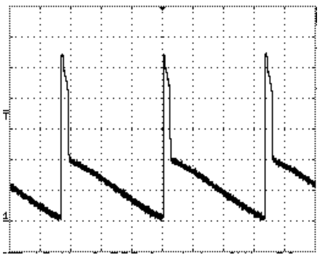
DEFLECTION



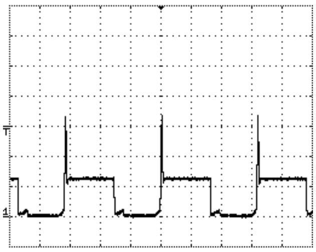
⑯ 1.0V 5ms/div



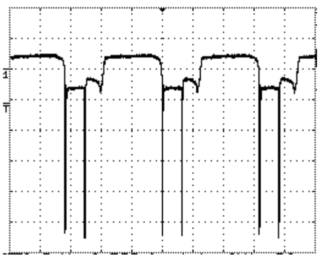
⑰ 10V 5ms/div



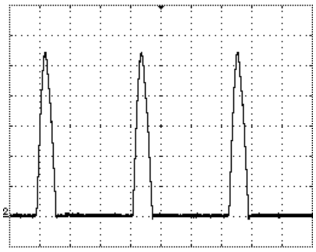
⑱ 10V 5ms/div



⑲ 50V 20µs/div

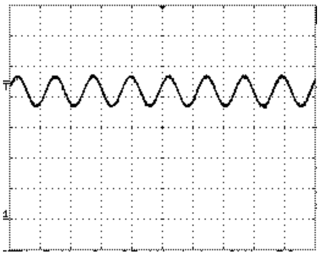


⑳ 2.0V 20µs/div

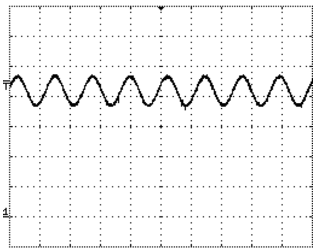


㉑ 200V 20µs/div

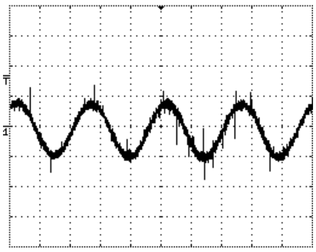
SOUND



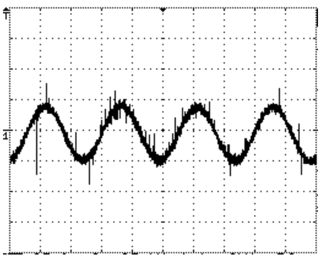
㉒ 1.0V 2ms/div



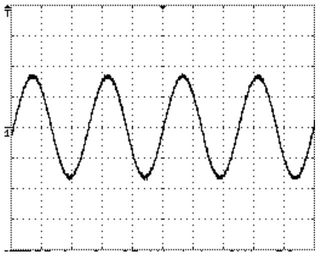
㉓ 1.0V 2ms/div



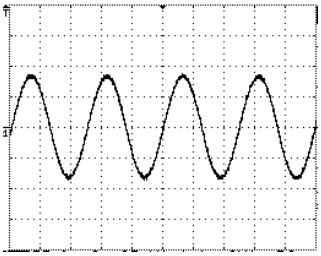
㉔ 20mV 1ms/div



㉕ 20mV 1ms/div

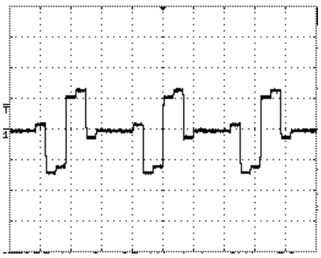


㉖ 500mV 1ms/div

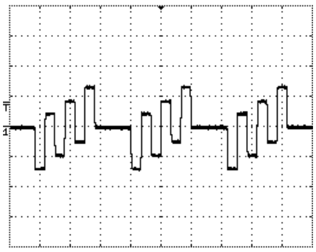


㉗ 500mV 1ms/div

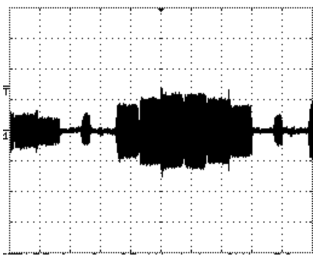
AV



㉘ 200mV 20µs/div

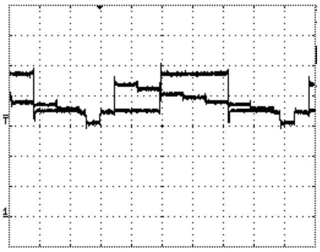


㉙ 200mV 20µs/div

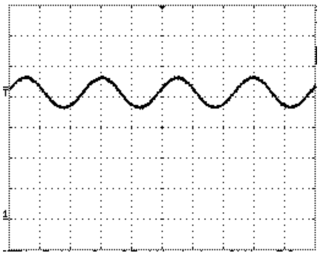


㉚ 100mV 10µs/div

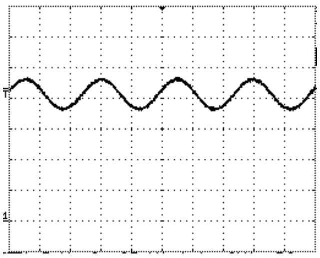
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.



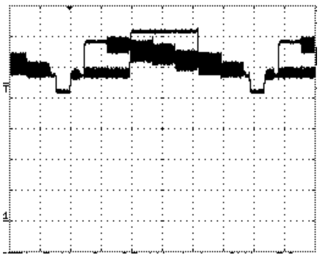
(31) 500mV 10μs/div



(32) 1.0V 1ms/div

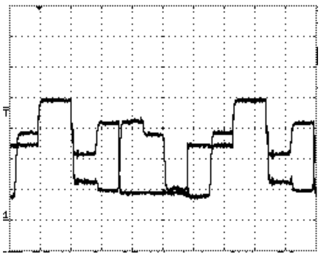


(33) 1.0V 1ms/div

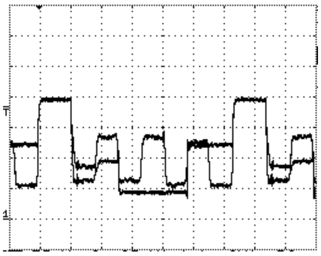


(34) 1.0V 10μs/div

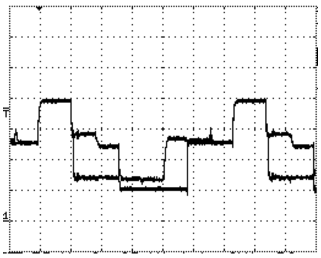
CRT



(37) 50V 10μs/div



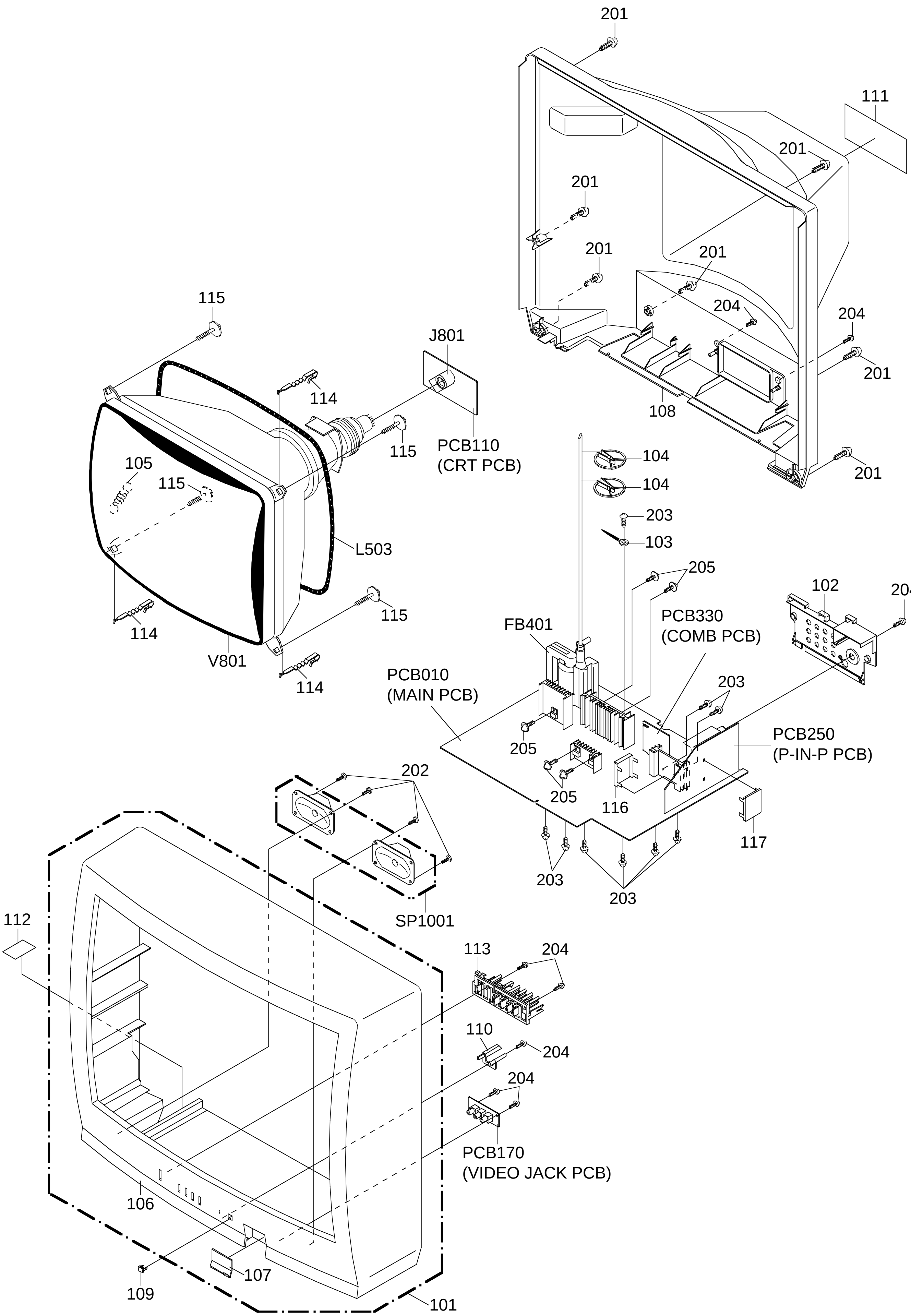
(38) 50V 10μs/div



(39) 50V 10μs/div

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

MECHANICAL EXPLODED VIEW



MECHANICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
101	AD300867	A3K102E720	CABINET,FRONT ASSY	
102	AD300757	771WPA0263	PLATE,JACK	
103	AD300758	899EFBA001	WIRING CLIP	
104	BZ710260	899HV3T000	HOLDER,ANODE WIRE	
105	AD300759	741WUA0021	SPRING,EARTH	
106	AD300760	701APJ0082	CABINET,FRONT	
107	AD300761	712APB0001	DOOR	
108	AD300762	702APA0128	CABINET,BACK	
109	AD300763	711WPA0149	PLATE,FRONT	
110	AD300764	713WPA0163	GLASS,LED	
111	AD300868	7225490054	SHEET,RATING	
112	AD300766	7260000306	SHEET,CAUTION	
113	AD300767	735WPB0134	BUTTON,ASS'Y	
114	AD300768	762WPA0009	HOLDER,CRT WIRE	
115	BZ710033	8111J50D05	SCREW,TAPPING(A) GW22	5x35
116	AD300870	752WSA0184	SHIELD,CASE IF	
117	AD300869	752WSA0163	SHIELD,COVER IF	
201	BZ710036	8117540B04	SCREW,TAPPING(B0) TRUSS	4x20
202	AD300769	8117330A04	SCREW,TAPPING(B0) FLAT	3x10
203	BZ710019	8109630802	SCREW,TAP TITE(B) BRAZIER	3x8
204	BZ710031	8110630A04	SCREW,TAP TITE(P) BRAZIER	3x10
205	BZ710239	8109I30A04	SCREW,TAP TITE(B) WH7	3x10
---	AD300770	791AHA0024	FILM BAG	
---	AD300771	792AHA0085	PACKAGE,TOP	
---	AD300772	792AHA0086	PACKAGE,BOTTOM	
---	AD300773	793ACD0500	GIFT BOX	
---	AD300871	A3K102E975	INSTRUCTION BOOK KIT	
---	AD300872	J3K10201	INSTRUCTION BOOK	
---	AD300775	J3K10516	IMPORTANT SAFETY	
---	AD300776	J3K10517	REGISTRATION CARD	
---	AD300777	J3K10536	ESP CARD	
---	AD300779	JA4LD400	POLY BAG	

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	USA-TOSHIBA	Reference No.	Description	
		RESISTORS		
⚠R055	AD300041	R3X18A270J	R,METAL	27 OHM 2W
⚠R416	AD300416	R002T25R6J	RC	5.6 OHM 1/2W
⚠R418	BZ210105	R4X5T6183F	R,METAL	18K OHM 1/6W
⚠R420	BZ210053	R002T22R2J	RC	2.2 OHM 1/2W
⚠R422	BZ210013	R4X5T4104F	R,METAL	100K OHM 1/4W
⚠R426	BZ210105	R4X5T6183F	R,METAL	18K OHM 1/6W
⚠R435	AD300655	R903N8222J	RC	2.2K OHM 1/8W
⚠R436	BZ210090	R4X5T6822F	R,METAL	8.2K OHM 1/6W
⚠R438	BZ210190	R63581R22J	R,FUSE	0.22 OHM 1W
⚠R439	AD300043	R3X181102J	R,METAL OXIDE	1K OHM 1W
⚠R441	AD300036	R4X5T6562F	R,METAL	5.6K OHM 1/6W
⚠R500	BZ210080	R0G3K2275K	RC	2.7M OHM 1/2W
⚠R501	AD300720	R5X2AE1R2J	R,CEMENT	1.2 OHM 7W
⚠R505	AD300038	R3X20B473J	R,METAL	47K OHM 3W
⚠R517	AD300042	R3X18A010J	R,METAL OXIDE	1 OHM 2W
⚠R521	AD300041	R3X18A270J	R,METAL OXIDE	27 OHM 2W
⚠R522	AD300041	R3X18A270J	R,METAL OXIDE	27 OHM 2W
⚠R527	BZ210149	R3X18AR68J	R,METAL OXIDE	0.68 OHM 2W
⚠R542	AD300721	R3X281R15J	R,METAL	0.15 OHM 1W
⚠R543	BZ210064	R63584681J	R,FUSE	680 OHM 1/4W
⚠R554	AD300722	R002T2273J	RC	27K OHM 1/2W
R621	AD300849	R00202121J	RC	120 OHM 1/2W
⚠R804	BZ210050	R3X18A123J	R,METAL OXIDE	12K OHM 2W
⚠R806	BZ210050	R3X18A123J	R,METAL OXIDE	12K OHM 2W
⚠R808	BZ210050	R3X18A123J	R,METAL OXIDE	12K OHM 2W
		CAPACITORS		
⚠C408	BZ110101	E5EZF3222M	CE	2200 UF 25V
⚠C413	AD300067	E02LF4102M	CE	1000 UF 35V
C418	BZ110056	P447F2474J	CMPP	0.47 UF 200V FHS
⚠C420	AD300723	P4N8FJ153H	CMPP	0.015 UF 1.25KV
⚠C421	BZ110125	C0JLYR7Q2K	CC	470 PF 2KV YR
⚠C423	BZ110125	C0JLYR7Q2K	CC	470 PF 2KV YR
C425	AD300077	C0JLYR713K	CC	0.001 UF 2KV YR
⚠C426	AD300061	E5EZFD220M	CE	22 UF 250V
⚠C430	AD300064	E02LT8220M	CE	22 UF 100V
⚠C501	AD300067	E02LF4102M	CE	1000 UF 35V
⚠C502	AD300078	C0JBB0713K	CC	0.001 UF 2KV B
⚠C503	AD300078	C0JBB0713K	CC	0.001 UF 2KV B
⚠C504	BZ110074	E50HU5010M	CE	1 UF 50V
⚠C505	BZ110145	P2472B104M	CMP	0.1 UF 275V PHE840
⚠C506	BZ110145	P2472B104M	CMP	0.1 UF 275V PHE840
⚠C507	BZ110012	E51CGC471M	CE	470 UF 200V
⚠C508	AD300726	CB3LB0MQ2K	CC	470 PF 250V
⚠C510	BZ110018	E5EZT4101M	CE	100 UF 35V
⚠C513	AD300726	CB3LB0MQ2K	CC	470 PF 250V
C517	BZ110115	C0JLYR7H3K	CC	0.0022UF 2KV YR
⚠C519	AD300726	CB3LB0MQ2K	CC	470 PF 250V
⚠C521	AD300060	E62NFB101M	CE	100 UF 160V
⚠C522	AD300727	CB3LE0ML3M	CC	0.0033UF 250V
⚠C523	AD300060	E62NFB101M	CE	100 UF 160V
⚠C527	BZ110119	E02LF2222M	CE	2200 UF 16V
⚠C531	BZ110081	E02LT2471M	CE	470 UF 16V
⚠C534	BZ110152	C0JLYR7B3K	CC	0.0012UF 2KV YR
C535	BZ110115	C0JLYR7H3K	CC	0.0022UF 2KV YR
C536	BZ110115	C0JLYR7H3K	CC	0.0022UF 2KV YR
⚠C542	AD300728	E02LF5471M	CE	470 UF 50V
C808	AD300078	C0JBB0713K	CC	0.001 UF 2KV B
C1003	AD300067	E02LF4102M	CE	1000 UF 35V
C1004	BZ110053	E02LF3102M	CE	1000 UF 25V
C1009	BZ110053	E02LF3102M	CE	1000 UF 25V
		DIODES		
D001	AD300729	D97U03301A	DIODE,ZENER	MTZJ33A T-77
D101	BZ410020	D97U05R11B	DIODE,ZENER	MTZJ5.1B T-77
D102	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D103	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D106	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D107	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D108	BZ410021	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D109	BZ410054	0021721150	LED	SLR-342VCT32
D110	BZ410022	D97U06R81B	DIODE,ZENER	MTZJ6.8B T-77
D111	BZ410022	D97U06R81B	DIODE,ZENER	MTZJ6.8B T-77
D201	AD300070	D97U01201B	DIODE,ZENER	MTZJ12B T-77
⚠D401	AD300069	D97U02701B	DIODE,ZENER	MTZJ27B T-77
D402	BZ410043	D2WT011E10	DIODE,SILICON	11E1-EIC
D403	BZ410019	D97U03001B	DIODE,ZENER	MTZJ30B T-77
D404	BZ410023	D97U09R11B	DIODE,ZENER	MTZJ9.1B T-77
⚠D405	BZ410063	D2WTAU02A0	DIODE,SILICON	AU02A-EIC

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	USA-TOSHIBA	Reference No.	Description	
		DIODES		
⚠D406	AD300071	D97U01101B	DIODE,ZENER	MTZJ11B T-77
⚠D407	BZ410063	D2WTAU02A0	DIODE,SILICON	AU02A-EIC
D410	BZ410019	D97U03001B	DIODE,ZENER	MTZJ30B T-77
⚠D411	BZ410063	D2WTAU02A0	DIODE,SILICON	AU02A-EIC
⚠D501	BZ410085	D2WXN40050	DIODE,SILICON	1N4005-EIC
⚠D502	BZ410085	D2WXN40050	DIODE,SILICON	1N4005-EIC
⚠D503	BZ410085	D2WXN40050	DIODE,SILICON	1N4005-EIC
⚠D504	BZ410085	D2WXN40050	DIODE,SILICON	1N4005-EIC
⚠D505	BZ410052	D28F21DQN9	DIODE,SCHOTTKY	21DQ09N-FC4
⚠D506	AD300731	D2WXN49370	DIODE,SILICON	1N4937
D507	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D508	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
⚠D509	AD300075	D28TELS6N6	DIODE,RECTIFER	10ELS6N-TA1B2
⚠D510	AD300076	D28F30DF60	DIODE,RECTIFIER	30DF6-FC
⚠D511	AD300731	D2WXN49370	DIODE,SILICON	1N4937
⚠D512	BZ410076	D2WXB290S0	DIODE,SILICON	SB290S
D513	BZ410021	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
⚠D514	BZ410076	D2WXB290S0	DIODE,SILICON	SB290S
D515	AD300732	D28XQS04N0	DIODE,SCHOTTKY	11EQS04N-TA2B5
D516	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D517	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D518	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D519	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D520	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
⚠D521	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
⚠D527	BZ410085	D2WXN40050	DIODE,SILICON	1N4005-EIC
D528	BZ410021	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
⚠D529	BZ410085	D2WXN40050	DIODE,SILICON	1N4005-EIC
⚠D530	BZ410085	D2WXN40050	DIODE,SILICON	1N4005-EIC
⚠D531	BZ410085	D2WXN40050	DIODE,SILICON	1N4005-EIC
D601	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D602	BZ410066	D97U06R21B	DIODE,ZENER	MTZJ6.2B T-77
D603	BZ410066	D97U06R21B	DIODE,ZENER	MTZJ6.2B T-77
D604	BZ410066	D97U06R21B	DIODE,ZENER	MTZJ6.2B T-77
D605	BZ410043	D2WT011E10	DIODE,SILICON	11E1-EIC
D606	AD300850	D97X05R61B	DIODE,ZENER	MTZJ5.6B T-72
D607	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D608	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D611	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D612	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D613	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D614	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D615	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D711	BZ410066	D97U06R21B	DIODE,ZENER	MTZJ6.2B T-77
D750	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D801	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D802	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D803	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D807	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D808	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D809	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D1801	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
		ICS		
⚠IC051	BZ611015	I1KA97805A	IC	KIA7805API
IC101	AD300851	I56D07062A	IC	OEC7062A
IC103	AD300050	I9UJ0T600C	IC	PST600C
IC198	AD300852	A3K102E015	IC	S-24C16AFJA-TB-01
IC201	AD300058	I05DC12530	IC	TB1253N
IC303	BZ611034	I06DF62420	IC	M62420SP
⚠IC401	AD300414	I03TD80410	IC	LA78041
⚠IC501	BZ611036	I2BT06624G	IC	STR-G6624
⚠IC502	BZ611033	I1KA97809A	IC	KIA7809API
⚠IC503	BZ611015	I1KA97805A	IC	KIA7805API
⚠IC504	BZ410040	0002500560	PHOTO COUPLER	TLP621(D4-GR-LF2)
IC701	AD300054	I0UD013110	IC	MM1311AD
IC750	AD300853	I07S07645N	IC	BA7645N
IC751	BZ611049	I0UF012340	IC	MM1234
IC902	AD300059	I01FF58290	IC	AN5829S
⚠IC1001	AD300056	I0FSP52760	IC	AN5276
IC1501	AD300609	I05FE90A45	IC	TC90A45F
IC1801	AD300854	I06FE56640	IC	M65664FP
⚠IC1802	AD300855	I0UF9563F0	IC	MM1563F
IC1803	AD300856	I55F0ET080	IC	TC7SET08F
		TRANSISTORS		
Q101	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q102	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q103	BZ510071	TNAAB05003	COMPOUND TRANSISTOR	KRC102RTK

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	USA-TOSHIBA	Reference No.	Description	
		TRANSISTORS		
Q107	BZ510068	TNAAJ05003	COMPOUND TRANSISTOR	KRC111RTK
Q109	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q201	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q202	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q203	BZ510001	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q204	AD300734	T8AA03881S	TRANSISTOR,SILICON	KTC3881S-RTK
⚠Q402	BZ510027	TC3Q026210	TRANSISTOR,SILICON	2SC2621(D,E)-RAC
⚠Q405	BZ510040	TDUU024990	TRANSISTOR,SILICON	2SD2499(LB0EC1)
Q406	BZ510049	TPYJD05001	COMPOUND TRANSISTOR	DTA144EKAT146
⚠Q501	BZ510070	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
Q504	BZ510069	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
⚠Q507	BZ510069	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
⚠Q508	AD300611	TAAT01273Y	TRANSISTOR,SILICON	KTA1273_Y
Q509	BZ510071	TNAAB05003	COMPOUND TRANSISTOR	KRC102RTK
⚠Q510	BZ510031	TD3T007340	TRANSISTOR,SILICON	2SD734(E,F)-AA
⚠Q511	BZ510070	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
⚠Q512	BZ510004	TA3T016240	TRANSISTOR,SILICON	2SA1624-AA
Q603	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q604	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q701	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q704	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q705	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q709	BZ510001	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q750	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q751	BZ510001	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q752	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q753	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q754	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q755	BZ510001	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
⚠Q801	BZ510027	TC3Q026210	TRANSISTOR,SILICON	2SC2621(D,E)-RAC
⚠Q802	BZ510027	TC3Q026210	TRANSISTOR,SILICON	2SC2621(D,E)-RAC
⚠Q803	BZ510027	TC3Q026210	TRANSISTOR,SILICON	2SC2621(D,E)-RAC
⚠Q810	AD300442	TCYT1740S0	TRANSISTOR,SILICON	2SC1740SP(R,S) TP
⚠Q811	AD300442	TCYT1740S0	TRANSISTOR,SILICON	2SC1740SP(R,S) TP
⚠Q812	AD300442	TCYT1740S0	TRANSISTOR,SILICON	2SC1740SP(R,S) TP
Q1001	BZ510068	TNAAJ05003	COMPOUND TRANSISTOR	KRC111RTK
Q1501	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q1502	BZ510001	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q1503	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q1504	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q1803	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q1804	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q1805	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q1806	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q1807	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q1808	BZ510001	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
		COILS &TRANSFORMERS		
L002	BZ310002	021673101K	COIL	100 UH
L101	AD300121	021LA62R7K	COIL	2.7 UH
L202	BZ310101	0216A61R2K	COIL	1.2 UH
L203	BZ310101	0216A61R2K	COIL	1.2 UH
L204	BZ310043	021LA6150K	COIL	15 UH
L205	BZ310003	021673470K	COIL	47 UH
L301	BZ310029	021LA6470K	COIL	47 UH
L302	BZ310058	021LA6220K	COIL	22 UH
⚠L402	BZ310063	022100027A	COIL,LINEARITY	ELH5L4113
⚠L501	AD300402	029X000098	COIL,LINE FILTER	SS28H-20075
⚠L503	AD300735	028R270008	COIL,DEGAUSS	8R270008
L601	BZ310003	021673470K	COIL	47 UH
L602	BZ310002	021673101K	COIL	100 UH
L603	BZ310040	02167F470J	COIL	47 UH
L604	BZ310040	02167F470J	COIL	47 UH
L701	BZ310005	02167D101K	COIL	100 UH
L703	BZ310040	02167F470J	COIL	47 UH
L750	BZ310041	02167F101J	COIL	100 UH
L751	BZ310002	021673101K	COIL	100 UH
L753	BZ310041	02167F101J	COIL	100 UH
L802	AD300123	021673151K	COIL	150 UH
L803	AD300123	021673151K	COIL	150 UH
L804	AD300123	021673151K	COIL	150 UH
L901	BZ310058	021LA6220K	COIL	22 UH
L1501	BZ310052	021LA6100K	COIL	10 UH
L1502	BZ310043	021LA6150K	COIL	15 UH
L1503	AD300614	021673821K	COIL	820 UH
L1506	BZ310058	021LA6220K	COIL	22 UH
L1801	BZ310053	021673100K	COIL	10 UH
L1802	AD300857	02167D471K	COIL	470 UH

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	USA-TOSHIBA	Reference No.	Description	
		COILS &TRANSFORMERS		
L1804	AD300612	02167F100J	COIL	10 UH
L1805	AD300612	02167F100J	COIL	10 UH
T401	AD300736	045013002J	TRANS,HORIZONTAL DRIVE	ZTS7196-3
⚠T501	AD300737	048140064S	TRANSFORMER,SWITCHING	8140064S
		JACKS		
J203	BZ614203	060Q431018	RCA JACK	AV3-19DS-1
J701	BZ614203	060Q431018	RCA JACK	AV3-19DS-1
J702	AD300108	063Q700002	JACK	YKF51-5503
J703	BZ614203	060Q431018	RCA JACK	AV3-19DS-1
J704	AD300738	060Q411017	RCA JACK	AV3-19D-5
J705	AD300739	060Q401048	RCA JACK	AV1-06D-3
J706	AD300740	060Q401049	RCA JACK	AV1-06D-4
J707	AD300741	060Q421018	RCA JACK	AV1-06DS-2
⚠J801	BZ614057	066C130015	SOCKET,CATHODE RAY TUBE	CVT3275-5102
		SWITCHES		
SW101	BZ612001	0504201T31	SWITCH,TACT	SKHVBED010
SW102	BZ612001	0504201T31	SWITCH,TACT	SKHVBED010
SW103	BZ612001	0504201T31	SWITCH,TACT	SKHVBED010
SW104	BZ612001	0504201T31	SWITCH,TACT	SKHVBED010
SW105	BZ612001	0504201T31	SWITCH,TACT	SKHVBED010
		VARIABLE RESISTORS		
VR401	BZ210194	V1263H3BT7	VOLUME,SEMI FIXED	RH0683CJ3R
VR502	BZ210067	V116314BTC	VOLUME,SEMI FIXED	EVNCYAA03B14
		P.C.BOARD ASSEMBLIES		
PCB010	AD300858	A3K102E010K	PCB ASS'Y	TMA509B
PCB110	AD300743	A3K106E110K	PCB ASS'Y	TCA367A
PCB170	AD300859	A3K102E170K	PCB ASS'Y	TEAA68B
PCB250	AD300860	A3K102E250K	PCB ASS'Y	TEAA69A
PCB330	AD300745	A3K106E330K	PCB ASS'Y	TEAA70A
		MISCELLANEOUS		
B502	BZ310122	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
B504	BZ310121	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B505	BZ310015	024AT03482	CORE,BEADS	BL02RN2-R62T4
⚠CD501	AD300746	120R615901	CORD,AC BUSH	0R615901
CD702	AD300747	06CU252002	CORD,CONNECTOR	CU252002
CD801	AD300748	06CU2A3401	CORD,CONNECTOR	CU2A3401
CD803	BZ614175	06CU82039A	CORD,CONNECTOR	SM1098-009-1A
CD805	BZ614175	06CU82039A	CORD,CONNECTOR	SM1098-009-1A
CF201	BZ613015	1011T4R504	FILTER,CERAMIC	EFCT4R5YS5A
CF202	BZ613022	1022T45R74	FILTER,SAW	SAF45MFG220Z
CF203	AD300686	1012T4R519	FILTER,CERAMIC TRAP	TPSRA4M50C00-A0
CF204	AD300513	1012T04702	FILTER,CERAMIC TRAP	MKT47.3MC110P-TF
CP001	AD300862	069J190048	CONNECTOR PCB SIDE	IMSA-9130S-09L
CP051	AD300862	069J190048	CONNECTOR PCB SIDE	IMSA-9130S-09L
CP101	BZ614238	0697260650	CONNECTOR PCB SIDE	TKC-M06X-A1
⚠CP401	AD300749	069W340018	CONNECTOR PCB SIDE	TS-80P-04-V1
⚠CP501	BZ614176	069S320419	CONNECTOR PCB SIDE	A3963WV2-3PD
⚠CP502	BZ614018	069W420029	CONNECTOR PCB SIDE	TV-50P-02-A1
CP503	AD300751	069D010010	CONNECTOR PCB SIDE	005P-2100
CP504	AD300751	069D010010	CONNECTOR PCB SIDE	005P-2100
CP751	AD300864	069J190038	CONNECTOR PCB SIDE	IMSA-9130B-09
CP752	AD300864	069J190038	CONNECTOR PCB SIDE	IMSA-9130B-09
CP803	BZ614017	069W320018	CONNECTOR PCB SIDE	TS-80P-02-V1
CP804	BZ614058	069W010010	CONNECTOR PCB SIDE	005P-2100
CP805	BZ614213	069S2A0629	CONNECTOR PCB SIDE	A2001WV2-10P
CP806	BZ614017	069W320018	CONNECTOR PCB SIDE	TS-80P-02-V1
CD701A	AD300622	06CH243001	CORD,CONNECTOR	CH243001
CP1001	AD300097	069W14T299	CONNECTOR PCB SIDE	TID-X04P-Z1
CP1501	AD300102	069J160260	CONNECTOR PCB SIDE	6035B-06Z002-T
CP702A	AD300752	069S250629	CONNECTOR PCB SIDE	A2001WV2-5P
CP702B	BZ614276	067U005049	WIRE HOLDER	B2013H02-5P
CP801A	BZ614273	067U010049	WIRE HOLDER	B2013H02-10P
CUS011	BZ710279	800WFAA006	CUSHION A	or
	BZ710001	800WF00004	CUSHION-A	
EL001	BZ614044	124120301A	EYE LET	XRY20X30BD
EL002	BZ614043	124116281A	EYE LET	XRY16X28BD
⚠F501	BZ614125	081PC6R304	FUSE	51MS063LCC
⚠FB401	AD300753	043227008R	TRANSFORMER,FLYBACK	3227008R
FH501	BZ614005	06710T0006	HOLDER,FUSE	EYF-52BC
FH502	BZ614005	06710T0006	HOLDER,FUSE	EYF-52BC
OS101	BZ614171	077Q014003	REMOTE RECEIVER	PIC-28143SY-2
⚠RY501	AD300114	0560V20115	RELAY	ALKS321
⚠SP1001	AD300754	070Y435002	SPEAKER	070Y435002
⚠TH501	BZ410079	DF5EL3R0A0	DEGAUSS ELEMENT	ZPB45BL3R0A
TM101	AD300865	07660DU020	TRANSMITTER	SBKM0P011A
⚠TU001	AD300691	0145S00052	TUNER,VHF-UHF	ENV56D66G3
⚠V801	AD300755	098T270601	CRT W/DY	A68AJB82X10

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	USA-TOSHIBA	Reference No.	Description	
		MISCELLANEOUS		
X101	AD300624	1001T8R004	CERAMIC,OSCILLATOR	EFOEC8004T4
X601	BZ613004	100CT3R505	CRYSTAL	HC-49/C
X1801	AD300866	100DT01405	CRYSTAL	AT-49

RESISTOR

	RC...................	CARBON RESISTOR

CAPACITORS

	CC...................	CERAMIC CAPACITOR
	CE...................	ALUMI ELECTROLYTIC CAPACITOR
	CP...................	POLYESTER CAPACITOR
	CPP..................	POLYPROPYLENE CAPACITOR
	CPL..................	PLASTIC CAPACITOR
	CMP......................	METAL POLYESTER CAPACITOR
	CMPL................	METAL PLASTIC CAPACITOR
	CMPP................	METAL POLYPROPYLENE CAPACITOR

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